

THOMASON

CIVIL ENGINEERING COLLEGE

CALENDAR.

1897.

ROORKEE:

PRINTED AT THE THOMASON CIVIL ENGINEERING COLLEGE PRESS.

1896.

BOOKS .
E. M. ROSEY, SUPERINTENDENT,
THOMSON COLLEGE PRESS.

CONTENTS

	<i>Page</i>
Almanac,	v
College Staff, 31st March, 1897, . .	xvii
1847-97,	xviii
Government Notifications authorising the establishment of the College, naming it, and instituting the Thomason Scholarship,	xxi
Rules of Admission:—	
Engineer and Telegraph Class,	xxv
Upper Subordinate Class,	xxxi
Lower Subordinate Classes,	xlii
Course of Study from 1st April, 1897 —	
Engineer Class,	xlix
Upper Subordinate Class,	lii
Lower Subordinate Class,	lxx
Course of Study from 1st November, 1897 —	
Engineer Class,	lxxiii
Telegraph Class,	xcli
Upper Subordinate Class,	cv
Lower Subordinate Class,	cxv
Draftsman and Computer Class,	cxlii
Mechanical Apprentices Class,	cxliii
Text-books for three Years' Course,	cxli
Scale of Marks,	cxlii
Table showing periods (half day) for work on each subject,	cxliii
Half day periods per week for study,	cl
Subjects of Term Examinations,	clvi
Subjects of Final Examinations,	clviii
British Military Surveying Class,	clx
Native Military Surveying Class,	clxii
Junior Civilian Survey Class,	clxvi
Annual Prize List,	clxx
Rules for Special Examinations (Outsiders) —	
Sub-Engineer,	clxxiii
Overseer,	clxxv

	<i>Page</i>
Examinations for the Accounts Branch, P. W. Department :—	
Superior Establishment, 	clxxvi
Subordinate Establishment—	
Promotion of Accountants to 2nd grade,	clxxxi
Appointment as Accountant, ...	clxxxii
Copies of the Rules and Papers for Examination, 	clxxxvii
Subsidiary Departments of the College, 	clxxxviii
Yearly Lists of Students—	
Engineer, Upper and Lower Subordinate Classes, ...	1
Alphabetical Lists of Candidates Passed by Direct Examination —	
Assistant Engineers, 	99
Sub-Engineers, ...	100
Overseers, 	100
Officers' Surveying Class,	108
Junior Civilian Survey Class, ..	106
British Military Survey Class, 	107
Native Military Survey Class, 	110
Abstract of Results of Examinations conducted by the College Staff,	122
List of Prizemen, 	124
" Donations, 	126
Examinations, Entrance :—	
Engineer Class, 	140
Upper Subordinate Class, Civil, ..	156
Superior Accounts Branch, 	162
Monthly, Engineer Class, 	169
Upper Subordinate Class, 	193
Final, Engineer Class, 	211
Upper Subordinate Class, 	238
Annual Report, 	237
List of Examiners.	
Abstract Results.	
Detailed Results.	
Prize List.	
Appendix A., College Administrative Account, ...	
" B., Press Account, 	
" C., Book Depot Account, 	
" D., Catalogue of New Books in Library, ..	

Thomason Q. C. College Calendar.

APRIL, 1897.

[Note—(1), First year; (2), Second year Students].

Date.	Days of the week.	General and Office	CLASSES.		
			Engineer.	Upper Subordinates.	Lower Subordinates.
1	Th	Delivered Statement of Establishment sent to Accountant-General, P. W. P. and Oudh. Casual Leave - Statement to Government.	Session begins (1) A. (3) Higher Standard Students commence (2) co-ordinate Secretary	Session begins (3)	Session begins (3).
2	F				
3	S				
4	S	5th Sun in Lent			
5	M				
6	T				
7	W	(Next Roll to Accountant General, P. W. P. and Oudh)		Earthwork Estimating Exam (2)	
8	Th				
9	F				
10	S				
11	S	Palm Sunday			
12	M	Harlem Fair, H			
13	T				
14	W				
15	Th	Maundy Thursday			
16	F	Good Friday			
17	S				
18	S	Easter Sunday			
19	M				
20	T				
21	W				
22	Th				
23	F				
24	S				
25	S	1st Sun after Easter			
26	M				
27	T				
28	W				
29	Th				
30	F				

Date	Days in this week	General and Other	CLASSES		
			Engineer.	Upper Subordinate.	Lower Subordinate
1	S	Statistical Return.		Project given out (2)	English Exam (
2	S	2nd Sun. after Easter.	Building Materials & Earthwork Exam. (1) Buildings and Bridges Exam. (2)		
3	M	{ Return of ship passages required.			
4	T				
5	W				
6	Th				
7	F	{ Rent Roll to Accountant-General, N. W. P. and Oudh.	Expl Science Exam (1) and (2)		
8	S		Drawing Exam (2)		
9	S	3rd Sun. after Easter			
10	M		Co-ordinate Geometry Exam (2) ^a		
11	T				
12	W			Trigonometry Exam (3)	
13	Th	Id-ul-Zoha, M.			
14	F				
15	S				
16	S	4th Sun. after Easter			
17	M				
18	T				Estimating Ex (
19	W			II. Estimating Exam (2,	
20	Th				
21	F				
22	S				
23	S	Regatta Holiday			
24	M	Queen-Engineer Birthday	Applied Mechanics Exam II (3) ^a (Carpentry Exam (1)		
25	T	{ Papers for Entrance Examination Beg near Clam postd.			
26	W				
27	Th	Ascension Day			
28	F				
29	S				
30	S	Sun. after Ascension			
31	M				

Date.	Days of the week.	General and Office.	Classes.		
			Engineers.	Upper Subordinate.	Lower Subordinate.
1	T				
2	W				
3	Th				
4	F				
5	S		Drawing Exam (1)		
6	S	Whit-Sunday Pentecost.			
7	M	Next Hall to Account not-General N-W P and Quid.	Roads and Railway Exam (2) Mechanics, Part I. Ex- am (1)		
8	T				
9	W	Entrance Exam. En- gineer Class.			
10	Th	Deane, H.			
11	F				
12	S	Muharram, M.			
13	S	Trinity Sunday			
14	M		Masonry Exam (1)		
15	T	Annual Accounts to Accountant General N W P and Quid.		III Estimating Ex- am (2)	
16	W				
17	Th				
18	F				
19	S		Drawing Exam (2)		
20	S	1st Sun. after Trin Ascension of Queen Victoria			
21	M				
22	T				
23	W			Applied Mechanics Exam (2)	Ferrotyp Exam. (2).
24	Th	Midsummer Day			
25	F				
26	S				
27	S	2nd Sun. after Trin.			
28	M	Queen Victoria crowned.			
29	T				
30	W			Memorisation Exam. (2)	

Day	Day of the Week	General and Office.	Engineer.	Upper Subordinate.	Lower Subordinate.
1	Th	{ Abstract Estimate of London supplies.			
2	F	{ Write for Recreation Food Stores.	Exam Science Exam (1) & (2)		
3	S	{ Casual Leave Statement to Government	Drawing Exam (1)		
4	S	3rd Sun. after Trin			
5	M		{ Differential Calculus Exam (2)		Surveying Lesson Exam (2).
6	T		{ Ironwork Exam. (1).		
7	W	{ Rent Roll to Accountant-General, & W. P. and Clerk.		IV Estimating Exam (2).	
8	Th				
9	F				
10	S		Estimating Course commences (1)		
11	S	4th Sun. after Trin			
12	M		Hydraulic Works Exam (2)		
13	T				
14	W		Ferrotypes Exam (2)	Ferrotypes Exam (2)	
15	Th				Trigonometry Exam (2)
16	F				
17	S				
18	S	5th Sun. after Trin			
19	M		III Applied Mechanics Exam. (2)		
20	T				
21	W			Bridges Exam (2)	
22	Th				
23	F				
24	S				
25	S	6th Sun. after Trin			
26	M				
27	T				
28	W			Drawing Exam (2)	
29	Th				
30	F				
31	S		Drawings given in (2)	Projects given in (2).	

		Classes.				
Date.	Days of the week.	General and Office.	Engineer.	Upper Subordinate.	Lower Subordinate.	
1.	S	7th Sun. after Trin.	{Mechanics Part II. Exam (1) Integral Calculus Exam. (2).			
2.	M					
3.	T					
4.	W					
5.	Th					
6.	F	{Rent Roll to Accountant-General. H. W. P. and Ouda.	Drawing Exam (1) & (2)			
7.	S					
8.	S	8th Sun. after Trin.				
9.	M					
10.	T					
11.	W			Applied Mechanics Exam (2)		
12.	Th	{Roshake Roudhen, R. S. Wajal, M.				
13.	F		Expl. Science Exams (1) & (2)			
14.	S				I Estimating Ex (2)	
15.	S	9th Sun. after Trin.				
16.	M	Vacation commences	N	N.	N.	
17.	T					
18.	W		O	O	O	
19.	Th					
20.	F	Janam Ashim, H.	I	I	I	
21.	S					
22.	S	10th Sun. after Trin.	T	T	T	
23.	M					
24.	T		A	A	A	
25.	W					
26.	Th		C	O	C	
27.	F					
28.	S		A	A	A	
29.	S	11th Sun. after Trin.				
30.	M					
31.	T		A	A	A	

		CLASS.			
No.	Day	General and Office.	Engineer.	Upper Subordinate.	Lower Subordi.
1	W				
2	Th	{ Ask Engineer, V. W. Ap- pointed, N. W. P. for Washington Region.			
3	F		M.	M.	M.
4	S				
5	S	13th Sun. after Trin.			
6	M				
7	T	{ Rent Hall to Account- ant-General, N. W. P. and Outh.	O	O	O
8	W				
9	Th				
10	F	Account General, H	I	I	I
11	S				
12	S	13th Sun. after Trin.			
13	M				
14	T		F	F	F
15	W				
16	Th		A	A	A
17	F				
18	S				
19	S	14th Sun. after Trin.			
20	M				
21	T		C	C	C
22	W				
23	Th		A	A	A
24	F				
25	S				
26	S	15th Sun. after Trin.			
27	M		V	V	V
28	T				
29	W				
30	Th				

Date	Day of Week	Classes			
		Cavalry and Officer	Engineer.	Upper Subordinate.	Lower Subordinates
1	F	Annual Accounts of Troop Funds to Adjutant, Subordinate.			
2	S	Subordinate Estimate Rec. Annual Leave Statement to Government.	N.	N.	N.
3	S	16th Sun after Trin.			
4	M		O	O	O
5	T	Decorate, H.	I	I	I
6	W				
7	Th	Host Roll to Accountant-General, N.-W. P. and Omdh.	T	T	T
8	F				
9	S		A	A	A
10	S	17th Sun after Trin.			
11	M		C.	C	C
12	T				
13	W		A	A	A
14	Th		V	V	V
15	F	Students	all rejoin	from	Vacation.
16	S		Surveys (1) Ground Tracing (2) co m m u n i c a t i o n	Surveys begin (1)	
17	S	18th Sun after Trin.			
18	M		Project to be given out (2)		
19	T				
20	W				
21	Th			Ground Tracing begins (3).	Surveys begin (2).
22	F		Expl Science Exam (1) & (2)		
23	S				
24	S	19th Sun after Trin.			
25	M	Decorate, H.	Ground Tracing Exam (2)		
26	T		Survey commences (3)		
27	W				
28	Th				
29	F				
30	S				
31	S	20th Sun after Trin.			

Date	Day of the week	CLASSES.			
		General and Office.	Engineer.	Upper Subordinates.	Lower Subordinates
1	M	{ Northern Upper and Lower Subordinates, British and Native Military Survey Course join.			Buildings & Bridge Exam. (2).
2	T				
3	W				
4	Th			Levelling begins (2)	
5	F	{ Superior Accts. Branch and 4th Grade Accts. Branch Resumes. posted.			
6	S				
7	S	21st Sun. after Trins			
8	M	{ Next Hall to Accountant-General. N.W. F and Gadh.	II Estimating Exam (1)		
9	T	{ Prince of Wales' Birth day			
10	W				
11	Th				
12	F				
13	S				
14	S	22nd Sun. after Trins			
15	M	{ Annual Tables for Rivers compiled from England.	Comme. Questions Exam (1)		
16	T				
17	W			Railways Exam (2)	Applied Mechan Exam. (2) "
18	Th				
19	F				
20	S				
21	S	23rd Sun. after Trins			
22	M	{ Entrance Exam, Superior Accts. Branch and 4th Grade Accts. Ex			
23	T				
24	W				
25	Th				
26	F				
27	S				Mechanics Exam (
28	S	Advent Sunday			
29	M				
30	T				

Date.	Days of the week.	General and Office.	CLASSES.		
			Engineer	Upper Subordinate.	Lower Subordinate.
1	W	{ Ex of Student Volunteers. Roll of Promotion of Surgeons to the Warrent grade.		English Exam (1)	English Exam. (1).
2	Th			Conforming begins (2).	
3	F				
4	S				
5	S	2nd Sun. in Advent			
6	M	{ Rent Roll to Accountant-General, N-W F and Outh. Confidential Report on M E Officers	III Estimating Exam (1)		
7	T				
8	W			Surveying Exam. (2)	Estimating Exam. (2)
9	Th				
10	F				
11	S				
12	S	3rd Sun. in Advent			
13	M	{ Letter to Govts about passing of Appointments (overmen to Wicks on completion of Appen this year)	I Applied Mechan. Exam (1)		
14	T				
15	W			Geometry Exam (1)	Arithmetic Exam. (1)
16	Th				Surveying Exam (2)
17	F				
18	S				
19	S	4th Sun. in Advent			
20	M		IV Estimating Exam (1)		
21	T				
22	W				
23	Th				
24	F				
25	S	Christmas Day			
26	S	1st Sun. after Christmas			
27	M				
28	T				
29	W				
30	Th				
31	F		Surveys given in (2).		

Date.	Day of the week.	General and Office.	CLASSES.		
			Engineers.	Upper Subordinates.	Lower Subordinates.
1	S	New Year's Day			
2	S	2nd Sun. after Christmas.	Courses and classifica- tions adjustment conference (1). Astronomy course commences (2).		
3	M	Ball of Hon. Com. called by Lord Mayor.		Courses begin (3).	
4	T	Ladies receiving tableting of Appointments Overseas positions.			
5	W	Casual Leave State- ments to Government.		Ground Tracing Exam (2)	
6	Th	Epiphany		Building Materials Exam (1)	Materials Exam. (1)
7	F	Stationary Island tea by Deputy Master.			
8	S	Each hold to Appointment General, N. W. P. and Orissa.			
9	S	Shab-i-Barat, M.			
10	M	1st Sun. after Epiph.			
11	T				
12	W			Roads Exam. (2)	
13	Th				
14	F				Roads Exam (2)
15	S	Meals from Calcutta Mint delivered from Boats from Bombay.	Drawings unfinished in August given in (2)		
16	S	2nd Sun. after Epiph.			
17	M		Hydro-Mechanics Exam. (3).		
18	T				
19	W			Drawing Exam. (2)	
20	Th			Earthwork Exam. (1)	Surveying Instru- ments Exam. (1)
21	F				
22	S				
23	S	3rd Sun. after Epiph.			
24	M	Despatch Circulars for admission to all Class- es for present year.			
25	T				
26	W			Adjustment of In- struments Ex. (1).	
27	Th				
28	F				
29	S				

FEBRUARY, 1898.

Date.	Days of the week.	General and Office	Classes.		
			Engineer.	Upper Subordinates	Lower Subordinates.
1	T		Curves and Instruments Examp. (1).		
2	W			Algebra Exam. (1)	Algebra Exam. (1).
3	Th				
4	F				
5	S				
6	S	Septuagesima.			
7	M	{ Fast Holy to Account ant-General. N-W E and Outh.	Note-books given in (1) & (3).	Note-books given in (2).	
8	T				Hydro-Mechanics Exam. (2).
9	W				
10	Th				
11	F				
12	S				
13	S	Sexagesima.			
14	M		II Applied Mechanics Exam (1) Projects to be given in (2)	Adjustment of Instruments (2)	
15	T				
16	W				Hydro-Mechanics Exam. (1).
17	Th				Physiography Exam. (1).
18	F	{ Last Friday of Rem- son, M.			Hydraulic Works Exam. (2).
19	S	Shrove Tides, II	{ Section Surveys given in (1) Drawings given in (1).		
20	S	Quinquagesima			
21	M				
22	T	Shrove Tuesday			
23	W	{ Ash Wednesday Id-ul-Fitar, M.			
24	Th				
25	F				
26	S				
27	S	Quadragesima			
28	M	{ 1st Sun. in Lent			

MARCH, 1898.

		CLASSES.				
Date	Day of the week	General and Office.	Engineers.	Upper Subordinates.	Lower Subordinates.	
1	T		FINAL EXAMINATION (3).	(5)	Barthwick Exam. (1).	
2	W			Carpentry Exam. (1).	FINAL EXAMINATION (3).	
3	Th					
4	F					
5	S					
6	S	2nd Sun. in Lent				
7	M	(Rest Roll to Account and General M W P and Outh.)	FINAL EXAMINATION (3).			
8	T	Holt, H				
9	W					
10	Th					
11	F					
12	S					
13	S	3rd Sun. in Lent.			Drawing Exam. (1)	
14	M					
15	T					
16	W			Mechanics Exam. (1).		
17	Th					
18	F					
19	S				Surveying - Leave Exam. (2)	
20	S	4th Sun. in Lent				
21	M					
22	T					
23	W	Mechanics Exam. (1)				
24	Th					
25	F					
26	S					
27	S	5th Sun. in Lent.			Surveying - Leave Exam. (2)	
28	M					
29	T					
30	W					
31	Th	(Closed Session and Account Report to Govt. and the Mr. Smith, in London)	DISTRIBUTION OF PRIZES AND CERTIFICATES.			

THOMASON CIVIL ENGINEERING COLLEGE.

COMMITTEE OF MANAGEMENT.

THE CHIEF ENGINEER TO GOVERNMENT IN THE PUBLIC WORKS DEPARTMENT, BUILDINGS AND ROADS BRANCH,	} <i>President.</i>
THE DIRECTOR OF PUBLIC INSTRUCTION, N-W PROVINCES AND Oude, ...	
THE MANAGER, Oude and Rohilkhand Railway,	} <i>Members</i>
G WINNALL, ESQ., LOCOMOTIVE SUPERINTENDENT, Oude and Rohilkhand Railway, (on furlough),	
THE PRINCIPAL OF THOMASON COLLEGE,	
	<i>Member and Secretary</i>

COLLEGE STAFF.

31st March 1897.

PRINCIPAL, LIEUT-COLONEL J. CLIBBORN, I.S.C., B.A., L.C.B., T.C.D.

Assistant { *First*—CAPT E. D. BULLFIN, B.E., B.A., T.C.D.

Principals, { *Offy Second*—LIEUT H. B. D. CAMPBELL, R.E.

Masters of Upper Subordinate Class,	CAPT J. H. FAIRLEY, . . .	Head Master
	CONDE J. O'NEILL, . . .	First Assistant Master and Photo Instructor.
	SERGEANT B. BOLTON, . . .	Second Assistant Master and Supt. of Gardens & Buildings.
	" C. J. GYDE, . . .	Third Assistant Master
	" J. V. FRANCIS, . . .	Fourth Assistant Master

Upper & Lower Subordinate Classes,	G. T. SPARKS, ESQ., . . .	Instructor of Drawing
------------------------------------	---------------------------	-----------------------

Native Masters, Lower Subordinate Class,	BALDEO PRASAD, . . .	Head Master.
	SHANKAR LAL, . . .	First Assistant Master.
	CHHOTER LAL, . . .	Second Assistant Master.
	AHMAD BEG, . . .	Third Assistant Master.
	ABDUL HASIR, . . .	Fourth Assistant Master
	AJUDHIA NATH, . . .	Fifth Assistant Master

Superintendent of Press,	Mr H. ROBEY.
Printer and Reader,	SERGEANT G. F. SKEATH.

Superintendent of Office,	Mr H. J. L. GREGAN.
Head Clerk,	SHAMA CHARAN SUR.
Clerk, Book Depot,	BENODE BEHARI BARNWAL.
Assistant Librarian,	Mrs J. H. MEE.

COLLEGE STAFF FROM 1847-1897.

VISITORS

COL. SIR P. T. CAULLEY, K.C.B., B.A.
 MAJ.-GENL. SIR W. BAKER, K.C.B., R.E.
 COL. BAIRD SMITH, C.B., R.E.
 COL. A. D. TURNBULL, R.E.
 COL. J. H. DYAS, R.E.
 COL. W. W. H. GREATHED, C.B., R.E.
 MAJ.-GENL. A. FRASER, C.B., R.E.
 COL. H. A. BROWNLOW, R.E.
 MAJ.-GENL. F. W. PHILLIPS, R.E.

COL. J. O. MAYNE, R.E.
 COL. A. M. LANG, R.E.
 COL. D. WARD, R.E.
 COL. J. G. FORBES, R.E.
 COL. J. P. STEWART, R.E.
 T. H. WICKES, ESQ.
 HON'BLE J. G. H. GLAUGH, C.K.E.
 HON'BLE C. W. ODLING.

*PRINCIPALS

GENL. R. MACLAGAN, R.E., 1847-1859,
 and 1860-1860
 MAJOR OLDFIELD, R.E., (Offg) 1859-56
 COL. E. C. S. WILLIAMS, R.E., 1860-1862
 COL. J. G. MEDLEY, R.E., 1862-1871.
 COL. A. M. LANG, R.E., 1871-1877
 MAJOR A. CUNNINGHAM, R.E., (Offg)
 1876.

LIEUT. J. H. C. HARRISON, R.E. (Offg.)
 1861, 3 months and 1862, 4 months
 LIEUT.-COL. A. M. BRANDRETH, R.E.,
 1877-1891
 COL. J. D. M. BROWN, V.O., I.S.C., 1891-92
 CAPT. E. D. BULLER, R.E., (Offg)
 1894, 6 months.
 LT.-COL. J. CLIBBORN, I.S.C., B.A., 1892,
 in office

ASSISTANT PRINCIPALS

LT. WALKER, R.E., 1852-1856
 LT. MONKTON, R.E., 1856, 6 months.
 LT. G. T. CHENEY, R.E., 1856 & 1858-59
 LT. CHAMPAIN, R.E., 1856-1857
 LT. W. H. EAGLE, R.A., 1856-1860.
 LT. JEFFREYS, R.E., 1857-1859
 LT. A. M. BRANDRETH, R.E., 1859-1861
 LT. J. P. WESTMORLAND, R.E., 1860-63
 LT. C. C. SCOTT MONCRIEFF, R.E.,
 1861-1864
 LT. C. H. LUND, R.E., 1864-1864.
 LT. J. BROWNE, R.E., 1864-1864.
 LT. L. COKWAY GORDON, R.E., 1865-68
 LT. F. FIREBRACE, R.E., 1865-1868.
 CAPT. F. D. M. BROWN, V.O., 1868-68
 LT. W. B. S. BISSON, R.E., 1868-1870
 LT. C. S. BEAUCHAMP, R.E., 1868-1874.
 LT. R. B. FULFORD, R.E., 1870-1878.

LT. F. T. MAXWELL, R.E., 1876, 6 months
 LT. M. H. GREGSON, R.E., 1878-1877
 LT. S. M. MAYCOCK, R.E., 1874-1878 and
 1879-1881
 CAPT. A. CUNNINGHAM, R.E., 1864-65,
 and 1870-1880
 CAPT. G. C. ONKLOW, R.E., 1877, 3 m.,
 1878, 3 m., 1880, 3 m., and 1881-1886.
 CAPT. E. BLUNT, R.E., 1885-1890
 CAPT. R. V. PHILLIPPS, R.E., 1883, 6
 months, 1885-1894, and 1897-1899
 MAJOR J. H. C. HARRISON, R.E., 1877-79,
 1881-83, 1884-87 and 1890-93
 LT. R. F. G. BOND, R.E., 1894-96.
 LT. F. J. CROOKER, R.E., 1896-96
 CAPT. K. D. BULLER, R.E., B.A., 1899-
 1894 and 1895, in office
 LT. H. B. D. CAMPBELL, 1895, 8 months,
 and 1896, in office

PROFESSORS OF GEOLOGY AND EXPERIMENTAL SCIENCE

H. B. MEDICOTT, ESQ., F.G.S., 1855-63
 LT. C. S. BEAUCHAMP, R.E., (Offg) 1871
 LT. S. M. MAYCOCK, R.E., (Offg) 1878-79
 LT. G. C. ONKLOW, R.E., (Offg) 1883

CAPT. J. H. C. HARRISON, R.E., (Offg)
 1885, 8 months.
 MURRAY THOMSON, ESQ., M.D., F.R.S.E.,
 1884-1871, 1872-78, 1879-1883 and 1884-
 1885

Duties taken up by Assistant Principal from 1883.

PROFESSORS OF MATHEMATICS

J. ELIOT, ESQ., M.A., 1863-1873

CAPT. A. CUNNINGHAM, R.E., 1872-75

Duties taken up again by Assistant Principal from 1873.

HEAD MASTERS

CAPT. H. BINGHAM, 1849-1855.
 J. GILCHRIST, ESQ., 1855-1860.

W. BOLTON, ESQ., 1867-1868
 KENNETH P. KEAT, 1860-1867 & 1868-1873.

HEAD MASTERS—(continued).

SERGEANT J. H. FAIRLEY, (Offg.) 1873, 8 months. C. C. SULLIVAN, Esq., 1878-1888.
CAPT. J. H. FAIRLEY, 1898, in office.

PROFESSOR AND INSTRUCTOR OF DRAWING.

W. SCOTLAND, Esq., 1848-1876. G. T. SPARKS, Esq., 1878-1890 and 1891, in office.

ASSISTANT MASTERS.

SERGEANT P. SEXTON, 1859-1861. SERGEANT W. McDOWELL, 1888-1896.
CORPORAL J. GILCHRIST, 1852-1859. " G. LARGEN, 1885-1896.
SERGEANT J. HALL, 1849-1861. MR. A. B. S. WIDNELL, 1886, 7 months.
" W. BURGIS, 1860-1861. SERGEANT A. LEIGH, 1886, 8 months.
" M. O'DEA, 1861. " A. H. JOHNSON, 1887-1888.
" P. HAYWARD, 1861-1863. " A. PARKER, 1888-1889.
" J. WHEATER, 1861-1864. MR. C. WILLFORD, 1884-1889.
" W. GRAHAM, 1863-1865. LIEUTENANT-CORPORAL F. A. CLIFT, 1889-1890.
" G. PHAROS, 1864-1867. CORPORAL R. GRAY, 1889-1890.
" J. PATTERSON, 1865-1868. MR. J. LOW, 1873-1879 & 1888-1891.
" C. B. NEWMAN, 1865-1866. BOMBER W. LYONS, 1890-1891.
" C. CARDWELL, 1866-1867. CORPORAL S. W. JOHNSON, 1890-1891.
" W. WHELAN, 1867-1869. BOMBER H. EDWARDS, part of 1891.
" G. DABORN, 1868-1870. LIEUTENANT-SERGEANT T. C. SCOTT, part of 1891.
" J. HAYTHOLDS, 1868-1870. CORPORAL F. W. HART, 1891-1892.
" T. GEMME, 1869-1871. SERGEANT J. W. PATTERSON, 1892.
" F. HORN, 1870-1873. LIEUTENANT-CORPORAL W. F. BASTMAN, 1892.
" H. WOODVILLE, 1870-1873. " H. G. STIMONS, 1893.
" A. BRANDON, 1871-1873. SERGEANT W. H. TIVER, 1893-1895.
" W. PERRY, 1868-69 & 1872-1873. BOMBER J. W. SYKES, 1894-1895.
CORPORAL C. BRACE, 1876-1877. SERGEANT A. D. McDONOUGH, 1895-1896.
MR. G. T. SPARKS, 1868-1875. " J. TAYLOR, 1895-1896.
" M. R. THOMPSON, 1872-1877. LIEUTENANT J. H. FAIRLEY, 1867 to 1874,
" W. HAY, 1873-1875. 1874 to 1885, and 1886 to 1896.
SERGEANT A. ANDERSON, 1875-1890. CONDE J. O'NEILL, 1877-1889, and 1890,
MR. A. H. RICE, 1880-1889. in office.
" A. J. FLUCK, 1880-1892. SERGEANT C. BOLTON, 1891-92 and 1896,
SERGEANT W. CHALOWER, 1882-1893. in office.
" F. BRADFORD, 1883-1884. SERGEANT C. J. GYDE, 1896, in office.
" A. BENNETT, 1889-1894. " J. V. FRANKLIN, 1896, in office.

HEAD NATIVE MASTERS

MANU LAL, 1848-1855. BHARI LAL, 1862-1891.
RAM CHANDRA, 1858. BALDEO PRASAD, 1891, in office.
MADHUSUDAN CHATTOPADHYAY, 1890-1893.

ASSISTANT NATIVE MASTERS

BHARI LAL, 1848-1861. TAJAMMAL HUSAIN, 1865-1869.
GANESHI LAL, 1862-1866, and 1861-1871. RAHIM BAKSH, 1867-1869.
MASUM ULLAH, 1868. ABDUL GANI, 1869-1870.
ABDUR RAHMAN, 1869-1868. SHANSHU DAS, 1867-1873.
AKBAR BEG, 1864-1867. SRI RAM, 1869-1871.
GOVIND PRASAD, 1868-1867. MUHAMMAD ALI, 1870-1871.
KANHATA LAL, 1868-1869. AMBIT HAY, 1871-1872.
MADDAD HUSAIN, 1860-1861. SHRO NARAYAN, 1869-70 and 1872-1873.
PATRI CHAND, 1861-1866. KURA MAL, 1869-1872.
FARM-UD-DIN, 1861-1867. SADULLAH, 1871-1873.

ASSISTANT NATIVE MASTERS—(continued).

GANGA SAHAY, 1872-1876.
 RAJLA RAM, 1872-1880.
 LUTFULAH KHAN, 1873-1880
 SHEIKH BHORA, 1885-1891.
 BALDWO PRASAD, 1873-1891
 JAGMOHAN LAL, 1877-1892.
 ARJUN SINGH, 1882-1894
 NARAY LAL, 1887-1895.

MAHOMED LATIF, 1891-1896
 DHANI RAM, 1894-1896.
 CHHOTU DAS, (*Offg*) 1896
 SHANKAR LAL, 1871, *in office*
 AHMAD BEG, 1878, *in office*
 CHHOTEN LAL, 1873, *in office*
 ABDUL HASIR, 1891, *in office*.
 AJUDHIA NATH, 1896, *in office*.

PRESS

Superintendents

MR. W H CAREY, 1861-1868
 " M. LYNGE, 1858-1860
 " R. CRAVEN, 1860-1861.
 CONDR. J JOHNSTON, 1861-76, & 1877-78
 LIEUT T D BONA, 1876-77, and 1878-89.
 MR. H. ROBERT, 1882, *in office*

Printers

MR. R CHEVRE, 1861-1860
 SERGT J JOHNSTON, 1861
 CONDR T D BONA, 1861-76, and 1877-78.
 MR. H. ROBERT, 1876-77, and 1878-1889.
 " R. GIBSON, 1889
 " H J CRABBE, 1889-1890,
 " F. M D'HELLO, 1890-1893
 " D E HOWSE, 1892-1895
 SERGT W J RUMSEY, 1896.
 " G F SKEATH, 1896, *in office*

ASSISTANT LIBRARIANS

SERGT J A. ALDERSELEY, 1870-1874
 " F B. SIMONS, B.E., 1875-1881.
 C. C. SULLIVAN, Esq., 1882

MR. T H BUTLER, 1882-1885.
 " J H MEE, 1883, *in office*

ACCOUNTANTS.

MR. H. HURST, 1852-1854
 " J. PHILIPS, 1854-1856
 " J McDONALD, 1856-1858.
 " RAM NARAYAN DAS, 1858-1859
 " G POWELL, 1859-1860.
 " M J CARNEY, 1860-1861
 " G. ROBERT, 1860-1869.

MR. C F STOWELL, 1858-1871.
 " H O'CONNOR, 1871-1873.
 " W H HALL, 1873-1877.
 " T H BUTLER, 1877-1893.
 H C CHATTERJI, (*Offg*) 1895, 3 months.
 MR. J A b ELLIS, 1893-1896

SUPERINTENDENT OF OFFICE.

MR. H. J. L. GREGAN, 1896, *in office*.

ASSISTANT ACCOUNTANTS

MR. W. COVENTRY, 1861-1862
 " J CORFOLLY, 1862-1867.
 " R. G. DOUGLAS, 1868-1874.

UMRAO SINGH, 1874-1879
 HEM CHANDRA CHATTERJI, 1896, *in office*.

HEAD CLERKS

MR. B G DOUGLAS, 1874-1876
 " G J HARRMAN, 1876-1879
 " W. PIGOTT, 1878-1884

RAMA CHARAN GHOSH, (*Offg*) part of
 1895
 RAMA CHARAN SUI, 1896, *in office*.

BOOK DEPOT.

Curators.

HYDER KHAN, 1872-1873.
 HAN PRASAD, 1873-1874.
 UMRAO SINGH, 1874-1879
 MR. W. PIGOTT, 1879-1884
 " J. H. MEE, 1884-1889.

RAMA CHARAN GHOSH, (*Offg*) 3m., 1893
 SANKUNTH NATH BANERJI, (*Offg*) 1896.
 BEHODU BEHARI BANERJI, 1889, *in office*.

MUNSHI

UMRAO SINGH, 1881-1894

**GOVERNMENT NOTIFICATIONS AUTHORIZING THE
ESTABLISHMENT OF THE COLLEGE, NAMING
IT, AND INSTITUTING THE THOMASON
SCHOLARSHIP.**

GENERAL DEPARTMENT

No. 949 of 1847.

Head Quarters, the 25th November, 1847.

The Lieutenant-Governor directs the publication, for general information, of the following *Prospectus* of a College for instruction in Civil Engineering, which is now established at Roorkee, and of which Lieut. R. Macdagan, Engineers, has been appointed Principal

PROSPECTUS OF THE CIVIL ENGINEERING COLLEGE AT ROORKEE.

1st. The College is designed to give Theoretical and Practical instruction in Civil Engineering to Europeans and Natives, with a view to their employment on the Public Works of the Country, according to their several qualifications and the requirements of the Service.

2nd The Director of the Ganges Canal will be *ex-officio* Visitor of the College.

3rd. There will be three Departments in the College, in each of which will be a certain number of Stipendiary Students, for whom quarters will be provided.

4th *First Department* *—Candidates for the appointment of Sub-Assistant Civil Engineer, as constituted by the Orders of Government dated October 9th, 1845

5th Persons admitted into this Department must be under the age of 22. They must have previously acquired an ability to read and write with ease and accuracy in the English language, and a knowledge of Geometry, Algebra, Mensuration, Plane and Spherical Trigonometry, Conic Sections and Mechanics

6th The number of Stipendiary Students in this Department is restricted to eight, who will be admitted only with the sanction of the Government.

* Engineer Class.

7th. Scholars from any of the Government Colleges, if properly qualified, may be transferred to this Department, receiving travelling allowance to Roorkee at the established rate. They will there receive, besides free quarters, an increase of one-fourth to their Scholarship allowance to cover extra expenses, or such increase as will make up their Stipend to the amount of 40 Rupees per mensem. * Properly qualified persons not attached to any Government College will receive a monthly allowance of 40 Rupees in addition to free quarters.

8th. Candidates for these Stipends are desired to submit their ap-

Superintending Engineer & Executive Officers in the Central and North-Western Provinces and Punjab Divisions	applications to the Principal of the Roorkee College, accompanied with
Superintending and Executive Officers of Canals and Roads.	Certificates of their proficiency in
Principals of Agra, Delhi and Benares Colleges.	the above-named subjects, and of character from some one of the

Officers noted in the margin The Principal having satisfied himself of their proficiency, in such manner as he may find to be best, will submit his recommendation to the Secretary to Government, North-Western Provinces.

9th. *Second Department* †—European Non-Commissioned Officers and Soldiers. They will be required, previous to their admission, to prove by examination, conducted in such manner as the Principal may find best, their proficiency in Reading, Writing, Arithmetic, Elementary Geometry, Mensuration and Simple Plan Drawing. A certificate of character will also be required from the Commanding or Staff Officer of the Regiment, Troop or Company, to which they belong.

10th. Their instruction at the College will be regulated with a view to their employment as Overseers in the Department of Public Works, to which they will, when qualified, be transferred to meet the demands of the Service.

11th. Their Travelling charges to Roorkee will be paid. They will remain at the College on probation for six months, during which time they will receive, besides free quarters and their Regimental Pay, the same advantages as with their Corps, or an equivalent in money. If approved at the end of this period, they will then receive the pay of an Assistant Overseer, and continue under instruction at the College, to be drafted off for the Public Service as may be found advisable. During

† Upper Subordinate Class.

the time they remain at Roorkee, they will be under the command of the Officer who fills the post of Principal of the College.

12th. * Their number is not at present to exceed ten.

13th *Third Department.**—Native youths desirous of instruction in Surveying, Levelling, and Plan Drawing. A fair acquaintance with Arithmetic up the Native form, and an ability to read and write Urdu in the Persian Character will be the qualifications required for admission to this Department.

14th. The number of Stipendiary Students in this Department will be limited to sixteen, who will receive a monthly allowance of 5 Rupees for maintenance, besides free quarters.

15th. Properly qualified Candidates who are willing to come to Roorkee and support themselves there at their own cost, will be admitted into all the Departments so far as means may be available for their instruction. Should the number of such applicants be numerous, moderate fees will be hereafter demanded for admission to the benefits of the Institution. Instruction will for the present be gratuitous, and no payments will be demanded without previous notice of one year.

16th. Students who have conducted themselves to the satisfaction of the Principal, will, on leaving the College, be furnished with a certificate of their character and qualifications.

17th. Annual examinations will be held, when all Students attached to the College will be classed according to their proficiency. Prizes of Books, Mathematical Instruments, &c, will be given to the most deserving Students.

By Order of the Hon'ble the Lieutenant-Governor, North-Western Provinces.

(Signed) J. THORNTON,
Secy. to the Govt, N.-W. P.

No. 888 A.

Camp Roorkee, 10th April, 1864.

In accordance with instructions received from the Most Noble the Governor-General of India in Council, the Honourable the Lieutenant-Governor is pleased to publish for general information and guidance the following despatch from the Honourable the Court of Directors, approving the recommendation of his Lordship in Council for the foundation of

* Lower Subordinate Class.

a Scholarship or Prize at Roorkee College in memory of the Lieutenant-Governor, and communicating their command that the College be henceforth designated the "Thomason College of Civil Engineering at Roorkee."

No. 6.

OUR GOVERNOR-GENERAL OF INDIA IN COUNCIL—
PUBLIC DEPARTMENT

London, 24th February, 1854.

1. We entirely concur in the opinion you express, that it becomes

the Government of India
Letter, dated 4th November, No 80 of 1853. Submitting for Court's Sanction, a proposal for the foundation of a Scholarship or Prize at the Roorkee College, in memory of the late Mr Thomason

to institute some enduring memorial of the eminent merits and services of Mr Thomason, and we think that the object cannot be accomplished in a more appropriate manner than by connecting it with the College of Civil Engineering at Roorkee

2. We approve the proposal you have submitted to us, and authorize you to carry it out in such a way as may seem to you most suitable. At the same time we are of opinion that the opportunity should be taken of marking our sense of Mr Thomason's public services, and of connecting his memory with the Roorkee College in a still more emphatic manner, it appears to us very fitting that an institution of such peculiar importance to India, and of a character so entirely novel in that country, should bear the name of its founder, and it is accordingly our desire that the College be henceforth designated the "Thomason College of Civil Engineering at Roorkee"

3. We directed that this change of name, and the reasons for it, be publicly notified in such form as you may deem most suitable.

We are, &c,

(Signed) RUSSELL ELLICE,
J OLIPHANT,
and other Directors.

The above papers are interesting as stating the original scheme of the Roorkee College, but the rules and the provisions therein laid down are no longer in force, having been gradually modified by a series of orders in subsequent years. The Rules now in force are detailed in the following pages

J. C.

RULES OF ADMISSION.

ENGINEER AND TELEGRAPH CLASS

ENGLISH AND NATIVE.

1. Candidates for admission to this Class must be Statutory Natives of India,* and not under 17 or above 21 years of age at date of entry to College. No Candidate will be examined more than twice, and no one who has studied for more than three months in any Class of the College is eligible for admission as a Candidate for a Government appointment.

2. Candidates who have not passed the Entrance Examination may be admitted for education, and to obtain certificates as Assistant Engineers, provided that (a), accommodation is available; (b), they possess the educational qualifications specified in rule 7, can produce the certificates specified in rules 4 and 5, and can satisfy the Principal that their knowledge of English is sufficient to enable them to pass through the College Course, (c), they pay a fee to be fixed by the Committee of Management so as not to exceed Rs. 100 per mensem. If, in addition, they conform to the age limits laid down in rule 1, they may compete for the guaranteed appointments. No Scholarships will be paid to these Students.

3. The College Session commences on 1st April, and applications for admission should reach the Principal, complete in all respects, *not later than* the 1st November preceding. The examination will be held in the last whole week of November. The application should be accompanied by a statement of—

* A "Native of India" means any person born and domiciled within the dominions of Her Majesty in India, or within the territories of Indian Princes tributary to, or in alliance with, Her Majesty, of parents habitually resident in India, and not established there for temporary purposes only.—Civil Service Regulations, Chapter II., para. 45.

Date of birth of the Candidate.

The school or schools at which he has been educated.

The profession, situation, relationship and residence of his guardian, (by whom ordinarily, and not by the Candidate himself, the application for admission should be made)

The name, title, and residence of the Officer under whose supervision the Candidate proposes to be examined. The Candidate should arrange for this before applying to the Principal. with whom, however, will rest the approval or otherwise, of the proposal.

The selection from Special Subject No 6 the Candidate elects to submit in.

4. Every Candidate will be required to produce testimonials* (which will not be returned) of good moral conduct, under the hand of the instructor under whom he has been educated, or of some other superior under whom he may have been employed or brought up, and these testimonials should have reference especially to his conduct during the two years immediately preceding his application for admission.

5. A Medical certificate must be furnished in the form printed on page xxxi, no other form will be accepted

6. An 'Examination fee' of Rs. 20 must be forwarded with the Candidate's application. until this fee has been received by the Principal, the Candidate's application will not be registered.

7. The qualifying tests for admission to Entrance Examination are the First Arts or Intermediate Examination of an Indian University, or the Final or High Standard Examination under the Code of Regulations for European Schools in force in Bengal, North-Western Provinces and Oudh, Punjab and Central Provinces, and every Candidate must pass an "Entrance Examination," in the subjects below noted, by means of papers which will be sent from Roorkee about the 15th November to the Officer who is elected to conduct the Examination

8. The Examination is competitive, and those who stand highest on the list of passed Candidates (only to the number of available vacancies, which is for the present fixed at 20), will be selected for admission

9. The following is the list of the six subjects for the Roorkee Entrance Examination. They are the same for both English and Native Candidates.—

SUBJECT No 1. LANGUAGES (150).**ENGLISH ESSAY (100)†**

A short Essay on a given subject. The subject will not be one requiring deep knowledge or originality of thought, but it will show whether the Candidate has the power of expressing his ideas in good English.

HINDUSTANI (50).

Translation of extracts, in the Persian character, from an easy Hindustani book, and of easy English sentences into colloquial Hindustani and grammatical questions. Full marks will not be given to Candidates unable to write the Persian character, but the Hunterian system of transliteration may be adopted.*

SUBJECT No. 2 PHYSICAL SCIENCE (50).

Science Primers—No 2, Chemistry, *Prof Boscawen*, No 3, Physics, *Prof Balfour Stewart*, and *Blandford's* Physical Geography for the use of Indian Schools

SUBJECT No. 3. HISTORY (50).

Of England (*Student's Home*), including Anglo-Indian History (*Leitchbridge's*) and the most recent events in history generally

SUBJECT No 4 MATHEMATICS (300).**ARITHMETIC (60).**

The whole, as in *Colenso's* Arithmetic.

ALGEBRA (60)

Toddhunter's (larger Algebra), Chapters I. to XXXVII.

GEOMETRY (50)

Euclid, Books I, II, III, IV, VI and XI, to Prop 21.

PLANE TRIGONOMETRY* AND LOGARITHMS (60)

Heights and Distances Solution of Triangles Properties of Triangles (as in *Toddhunter's* 'Plane Trigonometry,' Chapters I. to XIX., inclusive).

MENSURATION (60)

The whole. No special text-book.

SUBJECT No 5 DRAWING† (100).

Scales, Simple Geometrical Constructions, Printing, [as in the Roorkee College Manual, entitled 'First Principles of Geometrical Drawing,' which is the first 89 pages of *Paiford's* Manual.]

SPECIAL SUBJECT No. 6. (100).

(1). One of the following languages —

Latin, French, German, Sanskrit, Persian, or Arabic, or

(2). A further course of Physics and Chemistry.

No books of any kind allowed in the Examination hall. The logarithms necessary for the Trigonometry paper will be given in the question paper

† Particular attention is called to this subject in which many Candidates fail to qualify

Candidates taking a language will be expected to translate accurately into good English an easy passage from a book in the language selected, and to render an easy English paragraph into that language. Questions will also be set in grammar.

The text-books for Physics and Chemistry are—

Physics,	Ganot.
Inorganic Chemistry,	Frankland and Japp, (omitting sections in small type)

N.B.—Half the full number of marks in each of the six subjects are required for passing, and half marks must be obtained in English Essay. Candidates will be expected to write a clear, legible hand. Up to one-tenth of the marks of each paper will be deducted for slovenly work.

10. In this Class there are nine scholarships, three of Rs. 40 a month and six of Rs. 30 a month, tenable for three years. Not less than one scholarship of Rs. 40 and two of Rs. 30 a month fall vacant annually, and are awarded to those candidates who, being Statutory Natives of India and belonging to the North-Western Provinces or Punjab, pass most successfully the prescribed Entrance Examination.

11. A College fee of Rs. 10 per mensem will be paid by each Student entering the College under the conditions specified in para 8.

12. Each English Student, unless living with friends at Roorkee, will be required to join the Engineer Class Mess. Native Students make their own arrangements for messing.

13. All Students eligible for enrolment are enrolled in the "Thomson College Volunteer Company," and all undergo a course of Rifle Drill in the cold weather, arms and ammunition being provided by Government.

14. Each Student on admission is required to make a deposit in the College Treasury of Rs. 80, as an advance towards the purchase of the necessary Class Books for his own use. The books thus furnished to the Student will be his own property. He should on joining the College be either provided with a good set of drawing instruments, or with funds (about Rs. 100) for purchasing these from the College Book Depôt or Roorkee Workshops.

15. Quarters are provided for the English Students of this Class in the College bungalows, at a cost of Rs. 7 to Rs. 14 per mensem for each Student, each bungalow containing two sets of quarters, and accommodating two to four Students. Native Students may be required to live in barracks which are available for them, at a monthly rent of Rs. 5 for each Student.

16. Any Candidate before he can be allowed to join the College, must satisfy the Principal that he has sufficient means to defray his expenses during his course at Roorkee. A monthly allowance of Rs. 100 should suffice for the ordinary expenses of English Students, and Rs. 50 for Natives.

Any Student failing to keep his accounts up to date or to make sufficient progress in his Course of Study, will be suspended or ultimately removed from the College.

17. The College year commences on the 1st April and closes on the 31st March. There is a vacation from the 15th August to 15th October. Candidates admitted to the College on the results of the Entrance Examination held in November, 1896, will join on the 1st April, 1897.

18. To Students joining the College in April 1897 five appointments in the Public Works Department and one or two Telegraph appointments will be open under the conditions stated below.

19. The Civil Engineering Course extends over two years. In the second year in March a Final Examination is held, when those Students who have completed their course of study and have qualified will receive certificates to that effect.

20. To not less than seven qualified Civil Engineering Students standing highest in the Final Examination list, will be offered, in order of merit, one year's training on works in the Public Works Department as qualified Students of the Thomason College, Roorkee, on the following conditions —

- (1) To the first five Students a stipend of Rs. 100 a month in the case of Europeans and Eurasians, and of Rs. 50 a month in the case of Natives, with travelling allowance at the prescribed rates.
- (2). To two other Students travelling allowance at the prescribed rates, without stipend.

NB — Students are prohibited from parting with their Books and Drawing Instruments before or during their year of training.

21. At the end of the year of training five appointments in the Public Works Department, as 3rd grade Provincial Assistant Engineer, on Rs. 250 per mensem, will be awarded to those qualified Students who have passed their year's training successfully.

As far as possible Government will endeavour to provide temporary employment for qualified Students in excess of the number of permanent vacancies, who have been found competent at the end of their training.

22. Assistant Engineers after appointment are required to pass the examination laid down in Public Works Code, Volume I, Chapter II, paragraphs 12-14, before promotion to 2nd grade Assistant Engineer. If they are not recommended within three years for promotion to 2nd grade Assistant Engineer they are liable to removal from the Department.

23. The Telegraph Course extends over two years. In March of the second year there is a Final Examination, when those Students who have completed their course of study and have qualified will receive a certificate to this effect.

24. To the first Telegraph Students on the Final Examination list will be awarded the Telegraph appointments available. They will be first appointed as Apprentices in the Telegraph Department on Rs. 100 a month, and will remain on probation until they have proved their thorough fitness for service in the Telegraph Department. They will then be promoted to Assistant Superintendent, class VI, second grade, on Rs. 225 a month. If they are not recommended within three years for promotion to Assistant Superintendent, class VI, second grade, they will be liable to removal from the Department.

25. The following is a list of the Text-books, &c, used in the Engineer Class of the College, which are procurable at the College Book Depot. Application should be made to the Curator.

		Rs A			Rs A
Arithmetic, -- --	Coleman's, --	3 0	Civil Engineering, --	Reed's Treatise, --	12 6
Algebra, -- --	Todhunter's, --	4 0		Vol I & II, --	2 0
Geometry, -- --	" Euclid, --	0 0	Ironwork, -- --	Historical Iron and	2 10
Plane Trigonometry, --	Todhunter's, --	3 0		Steel Manufacture, --	2 0
Mensuration, -- --	" --	0 0	Surveying, -- --	College Manual, --	2 0
Statics and Dynamics, --	Nicks' Elementary	5 4	Drawing, -- --	" --	2 0
	Dynamics, --	5 4	Estimating, -- --	Key's Examples, --	2 10
Hydro-Mechanics, --	Basset's Elementary	5 0	Mechanics, -- --	Godard's Elements, --	4 10
	Hydrostatics, --	5 0	Experimental Science, --	Sanct's Physics, --	10 4
Conic Sections, Geometrical, --	Love's Hydrostatics, --	2 0	Inorganic Chemistry, --	Willam's, --	2 0
Co-ordinate Geometry, --	Dew's, --	2 10	Notes on Chemistry of	Chubb's Manual, --	2 6
Differential and Integral Calculus, --	Todhunter's, --	5 0	Building Materials, --		
	Todhunter's, --	11 10	Analysis of Lime and	Thomson's, --	0 0
Applied Mechanics, --	Reed's Manual, --	2 0	Concrete Stones, --		
	Vol I, --	2 0	Phototype Printing Process, --		0 0
	" Vol II, --	2 0	Lithary Catalogue, with additions, --		2 4

* Not available here.

† In the Press.

‡ In separate Sections (Sec. VII in the Press).

N.B.—(The price quoted is the charge for persons not in the College, including packing and postage).

Drawing Instruments, Drawing Boards, T-squares, &c., are procurable at the College Book Depot and Roorkee Workshops. Every Student must provide himself with these at his own cost. Surveying Instruments are supplied free of cost for the use of Students while at the College.

Forms required to accompany a Candidate's application for admission to Thomason College, Roorkee.

STATEMENT SHOWING AGE, EDUCATION, &c., OF CANDIDATE.

Name.	Date of Birth.	School or Schools at which educated.	Name, profession, residence of Guardian showing relationship.	Name, title, and locality of the Officer who is to conduct Examination.	Selection from Special Subject No. 6.	Remarks.
1	2	3	4	5	6	7

(Place and Date).

Signature.

Papers, &c., supplied herewith.

- 1 Declaration as Statutory Native.*
2. Baptismal or other certificate of age.
- 3 Certificate of qualifying test.
- 4 Testimonials of Conduct, as required by Rules†
- 5 Medical Certificate, &c.
6. Memo of consent of Officer to conduct Examination
7. Sec of Bd. 20

MEDICAL CERTIFICATE.

I certify, that I have carefully examined _____, that his eye-sight is normal, that he is fairly robust, and his constitution is sound, and that he has no disease, or bodily or mental infirmity, unfitting him now, or likely to unfit him in the future, for active out-door service in the Public Works Department.

OR

I certify, that I have carefully examined _____, that his eye-sight varies from normal sight in the following respects [here enter them], but that in my opinion [this defect or these defects] are not of such a character as to prove a drawback to his employment in the Public Works Department, on out door, drawing, or other work, that he is fairly robust, and his constitution is sound, and that he has no disease, or bodily or mental infirmity, unfitting him now, or likely to unfit him in the future, for active out-door service in the Public Works Department.

N.B.—The above certificate must be signed by a Commissioned Medical Officer, or by a Medical Officer in charge of a Civil Station. No other certificate will be accepted, nor will applicants be entertained unless the above rules be strictly complied with.

* Forms for 1 and 2 will be supplied by the College on application.

† Copies properly certified by an Executive Engineer, Public Works Department, will be accepted.

UPPER SUBORDINATE CLASS.

FIRST GRADE.

(*Extract Army Regulations, India, Vol II, Sec IX, Dem III*)

1880. The following are the rules for the admission of Non-Commissioned Officers of British Corps and Batteries to the second department of the Thomason College at Roorkee —

1. Candidates for admission to this Class must be Non-Commissioned Officers of not less than three years' service in the Army, of thoroughly good character, not over 25 years of age on date of admission (1st April), and well recommended by their Commanding Officers.

2. The Candidate's application for admission, when forwarded by his Commanding Officer to the Principal, must be accompanied by India Army Form 466.

3. Should the Candidate's application be accepted, papers of questions for the Entrance Examination will be sent by the Principal, (with directions for conducting the examination,) to the Candidate's Commanding Officer.

4. The following is a list of the subjects for the Entrance Examination.—

ENGLISH

- (1) Reading, Writing from Dictation, (neatness, rapidity and correct spelling)

MATHEMATICS

- (2) Arithmetic, comprising Vulgar and Decimal Fractions.
 (3) Elementary Mensuration, (as in *Toddhunter's Mensuration for Beginners*), or Algebra (to end of *Chapter VI, Colenso's Algebra, Part I*) as an alternative subject.
 (4) Geometry to the extent of (1) *the first two Chapters of Cape's Geometry*, or (2) *Euclid, Book I* (alternative papers will be issued)

This rule as to age will not have effect until the 1st April, 1886.

HINDUSTANI.

- (5). Translation of extracts, in the Persian character, from an easy Hindustani book, and of easy English sentences into colloquial Hindustani, and geometrical questions. Full marks will not be given to Candidates unable to write the Persian character; but the Hunterian system of transliteration may be adopted.

DRAWING*—(*Optional Subject*).

- (6). Use of Instruments, and Elements of Drawing. Printing Scales. Simple Geometrical figures, (as in the Roorkhee College Manual, "*First Principles of Geometrical Drawing*")

5. If the Candidate has passed in Hindustani by the Lower Standard this subject may be omitted from his Entrance Examination.

6. If the Candidate is a really skilled artisan, and can produce a Certificate (signed by an Executive Engineer in the service of Government) of his *practical* skill as a Mason, Carpenter, or Smith, his Entrance Examination will be confined to subjects (1), (2) and (5) only.

7. The application for admission may be submitted to the Principal at any time in the year previous to the 31st December, after which date no applications will be received. Questions for Examination will be sent to the Officer Commanding the Regiment shortly after receipt of application. Those who stand highest on the list of passed Candidates, to the number of vacancies, will be selected for admission.

8. For the whole Class there are 22 vacancies every year. Of these, 10 are of the 1st grade for Soldiers, 6 are of the 2nd grade for English Civilians, and 6 of the 3rd grade for Natives. In the event of there being insufficient passed candidates in any of the grades, the total number (22) will be made up by more admissions in the other grades, so as to ensure sufficient competition among the Students for the 15 guaranteed appointments.

9. The names of these selected Candidates will be published in General Orders in March, and the men will join the College on the 1st April following.

10. On joining the College, they will be required to bring with them the following papers:—

- (1). Last Pay Certificate.
- (2). Last Ration Certificate.
- (3). Medical History Sheet.

11. The men of this Class will be considered as doing duty at the

* Candidate may compete without taking up Drawing, but additional marks will be earned by proficiency in that subject.

College, and, being on probation, will remain on the strength of their respective Regiments (without prejudice to their promotion and other advantages) until appointed to the Military Works Department or Public Works Department, but after three months' absence from their Corps they will become supernumerary in accordance with the rules contained in Article 1058, Army Regulations, India, Vol. I., Part I.

Commanding Officers are authorized to promote (with the man next junior to them on the seniority roll) as supernumeraries, Non-Commissioned Officers studying at the College, on the understanding that they would not have been superseded, had they been serving with their Corps, and that Commanding Officers will be prepared to take them back in their seniority in the higher rank if not permanently admitted to the Military Works Department or Public Works Department.

Staff Sergeants, however, will not be permitted to study at Roorkee, unless they consent to resign their Staff appointments. Non-Commissioned Officers on the Unattached List will be required to resign their positions on that list, and revert to the regimental pay and allowance of the rank which they held previous to their transfer.

12. Whilst at the College, they will wear the undress or fatigue uniform of their rank and Regiment, and will be under the command of the Principal, or, in his absence, of the Senior Officer of the College Staff who may be present.

13. They will receive, whilst at the College, the same pay as with their Regiments, including Good Conduct Pay when entitled to it, together with ration money, and compensation, at the authorized rates in lieu of clothing and bedding, which will not be supplied during the entire three years' course. This compensation will be drawn regimentally and remitted in cash to the men, also 11 Rupees per mensem College allowance, which is intended to cover the cost of Books and Instruments, and other extra expenses.

NOTE—See also General Rules applicable to all three grades of this Class at page 21

SECOND GRADE.

1. Candidates for admission to this Class must not be under 17 or above 22 years of age at date of entry to the College. No one who has studied for more than three months in any Class of the College is eligible for admission as a Candidate for a Government appointment.

2. Applications for admission should *reach* the Principal, complete in all respects, *not later* than the 15th December, accompanied by a statement of—

The date of birth of the Candidate.

The school or schools at which he has been educated

The profession, situation, relationship and residence of his guardian, (by whom ordinarily, and not by the Candidate himself, the application for admission should be made).

The name, title, and residence of the Officer under whose supervision the Candidate proposes to be examined (The Candidate should arrange for this before applying to the Principal, with whom, however, rests the approval, or otherwise, of the proposal)

3. Every Candidate will be required to produce testimonials* (which will not be returned) of good moral conduct, under the hand of the instructor under whom he has been educated, or of some other superior under whom he may have been employed or brought up, and these testimonials should have reference especially to his conduct during the two years immediately preceding his application for admission.

4. The qualifying tests for admission to Entrance Examination will be the Entrance Examination of an Indian University, or the School Final in North-Western Provinces and Oudh, or the Alternative Entrance in the Punjab, or the School Final in Bombay, or the Upper Secondary Examination in Madras, or the Final or High Standard Examination under the Code of Regulations for European Schools in force in Bengal, North-Western Provinces and Oudh, Punjab and Central Provinces.

5. A "registration" fee of five (5) Rupees must accompany the Candidate's application for Examination.

6. A Medical certificate must be furnished in the form printed on page xliii; no other will be accepted.

7. The Candidate must pass an "Entrance Examination," commencing about January 7th, in the subjects noted below. Examination papers will be sent from Roorkee in the beginning of January to the Officer elected to conduct the Examination. Intimation of this will be sent at the same time to the Candidate.

Full Marks.

English Writing from Dictation, (neatness, rapidity, and correct

spelling), 50

Arithmetic, (Colenso's), the whole, 75

* Copies properly certified by an Executive Engineer of the Public Works Department will be accepted.

	Full Marks
Geometry, to the extent of the First Book of <i>Euclid</i> , with deductions, ..	50
Elementary Mensuration, (as in <i>Talbot's Mensuration for Beginners</i>),	70
Urdu Translation of extracts, in the Persian character, from an easy Hindustani book, and of easy English sentences into colloquial Hindustani, and grammatical questions. (Full marks will not be given to Candidates unable to write the Persian character; but the Hunterian system of transliteration may be adopted), ..	50
Elementary Drawing Printing Scales. Simple Geometrical figures, (as in the <i>Rockes College Manual "First Principles of Geometrical Drawing"</i>),	100
Total,	<hr/> 400

N.B.—One-half the marks in Drawing, one-third the marks in other subjects, and one-half the total are required for passing.

Those who stand highest on the list of passed Candidates, to the number of vacancies, will be selected for admission.

8. Each examination is complete in itself, and no credit for marks gained in one examination is carried on to any future examination. A candidate who has failed in, or withdrew from, an examination after his name has been registered, and presents himself for examination on a subsequent occasion must undergo the full examination, and furnish a fresh fee and certificate.

9. For the whole Class there are 22 vacancies every year. Of these, 10 are of the 1st grade for Soldiers, 6 are of the 2nd grade for English Civilians, and 6 of the 3rd grade for Natives. In the event of there being insufficient passed Candidates in any of the grades, the total number (22) will be made up by more admissions in the other grades, so as to ensure sufficient competition among the Students for the *J. F. Government's* appointments.

10. In this Class twelve Exhibitions or Scholarships are provided, six of Rs. 30 and six of Rs. 25 each per mensem, of these, six, each tenable for 2 years, are allotted annually to the Candidates who pass most successfully the prescribed Entrance Examination, and as free quarters are provided in the College (European Soldiers') Barracks for Students of this Class, this, or the same amount of private means, should suffice for the ordinary expenses of a Student of this Class.

In addition to the Students who obtain Scholarships under this rule, a limited number of Candidates who have passed the Entrance Examination under the usual conditions may be admitted for education,

and to obtain certificates as Upper Subordinates, provided that (a), accommodation is available; (b), they pay a fee to be fixed by the Committee of Management so as not to exceed Rs. 50 per annum. These Students will be eligible for the guaranteed appointments, but will not draw any Scholarships.

11. Each Student will be at liberty to make his own arrangements for the purchase of the necessary Class Books and Instruments, but Parents or Guardians wishing the same to be provided through the College, must deposit in the College Treasury the sum of Rs. 80, of which Rs. 50 must be deposited on the Student's admission, and Rs. 30 at the beginning of the Second Session. The books and instruments thus furnished to the Student are to be his own property, and should any balance of cash remain on this account at the time of his leaving the College, it will be repaid to him.

12. All the Students of this Class are enrolled in the "Thomason College Volunteer Company" and all undergo a course of Rifle Drill in the cold weather, arms and ammunition being provided by Government.

NOTE.—See also General Rules applicable to all three grades of this Class at page xi.

THIRD GRADE.

1. Candidates for admission to this Class must not be under 17 or above 22 years of age at date of entry to the College. No one who has studied for more than three months in any Class of the College is eligible for admission as a candidate for a Government appointment.

2. Applications for admission should reach the Principal, complete in all respects, *not later* than the 15th December, accompanied by a statement of—

The date of birth of the Candidate.

The school or schools at which he has been educated.

The profession, situation, relationship and residence of his guardian, (by whom, ordinarily, and not by the Candidate himself, the application for admission should be made).

The name, title, and residence of the Officer under whose supervision the Candidate proposes to be examined (The Candidate should arrange for this before applying to the Principal, with whom, however, rests the approval, or otherwise, of the proposal).

3. Every Candidate will be required to produce testimonials* (which will not be returned) of good moral conduct, under the hand of the instructor under whom he has been educated, or of some other superior under whom he may have been employed or brought up; and these testimonials should have reference especially to his conduct during the two years immediately preceding his application for admission.

4. The qualifying tests for admission to Entrance Examination will be the Entrance Examination of an Indian University, or the School Final in North-Western Provinces and Oudh, or the Alternative Entrance in the Punjab, or the School Final in Bombay, or the Upper Secondary Examination in Madras, or the Final or High Standard Examination under the Code of Regulations for European Schools in force in Bengal, North-Western Provinces and Oudh, Punjab and Central Provinces.

5. In case of pupils of Government Schools, who have passed as "Teachers," certificates must be furnished that three years have elapsed since they left the Normal School or they must furnish an order from the Inspector of Schools of their District authorizing their application to enter this College.

6. A "registration" fee of eight (8) Rupees must accompany the Candidate's application for Examination.

7. A Medical certificate must be furnished in the form printed on page xliii; no other will be accepted.

8. The Candidate must be acquainted with both the English Language and the Vernacular of Upper India, and able to speak, read, and write them with tolerable ease and accuracy. He must pass an "Entrance Examination," in the following subjects, commencing about January 7th. Examination papers will be sent from Boorkee in the beginning of January to the Officers elected to conduct the Examination. Intimation of this will be sent at the same time to the Candidate.

Full Marks.

English Writing from Dictation, (neatness, rapidity and correct spelling),	.. .. .	50
Arithmetic, (Colenso's), the whole, .. .. .	.. .. .	75
Geometry, to the extent of the First Book of <i>Euclid</i> , with deductions, .. .. .	.. .. .	50
Elementary Mensuration, (as in <i>Toddhunter's</i> Mensuration for Beginners), .. .. .	.. .. .	75

Copies properly certified by an Executive Engineer of the Public Works Department will be accepted.

	PAN MARKS.
Urdu. Translation of extracts, in the Persian character, from an easy Hindustani book, and of easy English sentences into colloquial Hindustani, and grammatical questions. (Full marks will not be given to Candidates unable to write the Persian character, but the Hunterian system of transliteration may be adopted),	50
Elementary Drawing Printing Scales Simple Geometrical figures, (as in the Roorkee College Manual " <i>First Principles of Geometrical Drawing</i> "),	100
Total, ..	400

NB—One-half the marks in Drawing, one-third the marks in other subjects, and one-half the total are required for passing.

Those who stand highest on the list of passed Candidates, to the number of vacancies, will be selected for admission.

9. No degree, certificate, &c., obtained by him at any other Institution will entitle a Candidate to enter this College, nor will it exempt him, in whole, or in part, from the Entrance Examination above detailed.

10. Each examination is complete in itself, and no credit for marks gained in one examination is carried on to any future examination. A candidate who has failed in, or withdrew from, an examination after his name has been registered, and presents himself for examination on a subsequent occasion, must undergo the full examination, and furnish a fresh fee and certificates.

11. For the whole Class there are 22 vacancies every year. Of these, 10 are of the 1st grade for Soldiers, 6 are of the 2nd grade for English Civilians, and 6 of the 3rd grade for Natives. In the event of there being insufficient passed Candidates in any of the grades, the total number (22) will be made up by more admissions in the other grades, so as to ensure sufficient competition among the Students for the 15 guaranteed appointments.

12. In this Class there are six Scholarships (each of Rs. 10 per mensem). of these, three Scholarships each tenable for 2 years, are allotted annually to the Candidates who pass most successfully the prescribed Entrance Examination, preference being given to natives of the N.-W. Provinces or the Punjab. No promise of a Scholarship can be given to any Candidate till all have been examined.

In addition to the Students who obtain Scholarships under this rule, a limited number of Candidates who have passed the Entrance Examination under the usual conditions may be admitted for education,

and to obtain certification as Upper Subordinates, provided that (a), accommodation is available; (b), they pay a fee to be fixed by the Committee of Management so as not to exceed Rs. 50 per mensem. These Students will be eligible for the guaranteed appointments, but will not draw any Scholarships.

13. Quarters are provided for the Students in the College (Natives') Barracks at a monthly rent of 1 Rs. each, and Students who are not holders of Scholarships will be required to pay a monthly tuition fee of Rs. 2 each.

14. Each Student will be at liberty to make his own arrangements for the purchase of the necessary Class Books and Instruments, but Parents or Guardians wishing the same to be provided through the College, must deposit in the College Treasury the sum of Rs. 50, of which Rs. 50 must be deposited on the Student's admission, and Rs. 20 at the beginning of the Second Session. The books and instruments thus furnished to the Student are to be his own property, and should any balance of cash remain on this account at the time of his leaving the College, it will be repaid to him.

(General Rules applicable to all three grades of this Class).

1. The Students of these Classes (European and Native) are intended for the Upper Subordinate Branch of the Public Works Department.

2. The complete course of each Student will extend over (nearly) 3 years, viz., two Sessions at the College devoted to *theoretical* training, and one year on the 'Works,' devoted to *practical* training as an Apprentice. If at any period of the Course their conduct is unsatisfactory, or if they fail to make sufficient progress in their studies, they will be suspended or removed from the College, and in the case of Military Students remanded to their Regiments.

3. The First Session, commencing on the 1st April, ends on the 31st March following. At the end of the First Session a long and searching Examination will be held: and no Student who fails in the standard prescribed for the First Year Course, will be allowed to stay at the College.

4. The vacation will be about 15th August to 15th October. So many Military Students as can be accommodated at the Landour Depot will be sent there for the benefit of their health; the remainder will be attached to the Regiment stationed at Roorkee, or remain at the Col-

lege: their pay will continue to be drawn in the College bills. Civil Students may stay in the College Barracks or go home to their friends, as they may prefer.

The despatch of Military Students from Thomason College to the Landour Depôt is to be restricted to men who are recommended by medical authority for transfer to the hills, and is to be arranged for in the ordinary way, anything special in the manner of sending them to the Depôt being avoided. The cost of the conveyance of the men will be a Military charge.

5. The Second Session will commence on the 1st April, and end on the 31st March following. At the close of this Session the Final (College) Examination will be held. None who fail to pass the prescribed test (as laid down in the "Course of Study"), will be allowed to continue under instruction.

6. Those who pass by the "Higher" or "College" Standard, will receive Special Certificates, exempting them from all further *theoretical* Examination for promotion to Sub-Engineer. Of those who pass successfully, 15 men will be appointed as "Overseer Apprentices." Preference will be given to the first 5th Military men of the Second Year on the list, then to Second Year men, Military and Civil, in order of standing. The Apprentices will spend the third year of their training in acquiring the *practical* part of their education. These Overseer Apprentices will be sent out to large and important works, and placed, either singly or in small parties, under the charge of experienced Upper Subordinates for instruction.

7. During this third or 'Apprentice' year, they will retain their position of 'Students,' and will continue to be borne on the College Lists,—in the case of Soldiers, on their Regimental Lists also. The Military pay and ration money of Soldiers will be drawn from the Military Department, (as during their College course,) by the Principal, Thomason College. They will in addition be provided with free quarters, and receive a "Staff" allowance sufficient to bring their total consolidated pay to Rs. 80 per mensem. married men will in addition to the above consolidated pay, receive the usual Regimental allowance for wife and children. Second Grade Apprentices will receive Rs. 60

* The five appointments guaranteed to Soldiers should be provided by the Military Works Department.

In addition to above the Railway Branch is prepared to employ two men annually, vide Government of India, Public Works Department, letter No. 2096 G, dated 2nd October, 1894.

per mensem as salary with free quarters. Third Grade Apprentices will receive Rs 40 per mensem.

8. The Apprentices will keep Notes of the Works they are instructed on, which they will submit monthly, with a diary of occupation, through the Instructor and Executive Engineer to the Principal at Roorkée. These officers will note on the diary their opinions regarding the Apprentices' application to work and conduct, and the appointment of each Apprentice to the Military Works Department, or Public Works Department, will depend on his steadiness, temper, intelligence, industry, and *practical* knowledge of the descriptions of work in which he has been instructed. The Principal will finally decide which Apprentices are fitted for permanent appointment to the Public Works Department.

NB—Students are prohibited from parting with their Books or Drawing Instruments either before or during their Apprenticeship year.

9. On the conclusion of their practical year's training on Works, the passed Apprentices will be permanently appointed to the Military Works Department or Public Works Department as Overseers of the grades to which they respectively belong, Military men being transferred to the Unattached List, and those who are under the rank of Sergeant, will be recommended for promotion to the rank of Sergeant from the date of their transfer to the Unattached List.

10. An Outfit allowance of Rs 150 will be granted to the passed Apprentices on his appointment to the Department.

11. Travelling allowance at the sanctioned rates, will be paid to passed Students, for the distance from Roorkée to the site of the work on which they are to serve their Apprenticeship, and again from this site to the Stations where they are to be employed as Overseers.

12. The following is a list of the Text-books, &c, used in the Upper Subordinate Class of the College, and procurable at the College Book Depôt. Application should be made to Curator.

Roorkes Training Section				RS	A					RS.	A.
I	Building Materials,			3	0	Colenso's Algebra,				2	10
II	Masonry,			1	4	"	Arithmetic,			2	0
III	Carpentry,			1	4	Cope's Geometry,				1	4
IV	Plasterwork,			1	4	Toddhunter's Trigonometry,				1	10
VI	Buildings,			1	4	"	Mensuration,			2	0
VII	Bridges,* say,			2	0	Love's Hydraulics,				—	0
VIII	Roads,			1	8	Jameson's Mechanics,				2	10
X	Railways,			3	8	Chambers's Logarithms,				2	8
College Manuals						Partridge's Printing Presses,				6	8
VII	Surveying,			2	0	Library Catalogue, with Addenda,				3	4
XIII	Drawing (Pulford's),			6	0						
XIII. First Principles of Geometrical											
	Drawing,			1	4						
IX	Key's Examples of Estimating,			3	12						

* In the Press.

* In the Press.

N.B.—(The price quoted is the charge for persons not in the College, including packing and postage)

Drawing Instruments, Drawing Boards, T-Squares, &c., are procurable at the College Book Depôt or the Rookies Workshops every Student must provide himself with these at his own cost. Surveying Instruments are supplied free of cost for the use of Students while at the College.

Forms required to accompany a Civil Candidate's application for admission to Thomson College, Rookies

STATEMENT SHOWING AGE, EDUCATION, &c., OF CANDIDATE.

Name	Date of Birth	School or Schools at which educated	Name, profession, residence of Guardian showing relationship	Name, title, and locality of the Officer who is to conduct Examination	Remarks
1	2	3	4	5	6

(Place and Date)

Signature

Papers, &c., supplied herewith

- 1 Testimonials of Conduct, as required by Rules.*
- 2 Baptismal or other certificate of age†
- 3 Certificate of qualifying test.
- 4 Medical Certificate, as required by Rules.
- 5 Memo of consent of Officer to conduct Examination
- 6 Fee

MEDICAL CERTIFICATE (MILITARY AND CIVIL CANDIDATES).

I certify, that I have carefully examined _____, that his eye-sight is normal, that he is fairly robust, and his constitution is sound, and that he has no disease, or bodily or mental infirmity, unfitting him now, or likely to unfit him in the future, for active out-door service in the Public Works Department.

I certify, that I have carefully examined _____, that his eye-sight varies from normal sight in the following respects [here enter them], but that in my opinion [this defect or these defects] are not of such a character as to prove a drawback to his employment in the Public Works Department, on out-door, drawing, or other work, that he is fairly robust, and his constitution is sound, and that he has no disease, or bodily or mental infirmity, unfitting him now, or likely to unfit him in the future, for active out-door service in the Public Works Department.

N.B.—The above certificate must be signed by a Commissioned Medical Officer, or by a Medical Officer in charge of a Civil Station. No other certificate will be accepted, nor will applications be entertained unless the above rules be strictly complied with.

* Copies properly certified by an Executive Engineer of the Public Works Department will be accepted.

† Form for 2 will be supplied by the College on application.

LOWER SUBORDINATE CLASSES.

1. The admissions to these Classes will be limited by the apparent demand for Sub-Overseers, there will usually be about 40 yearly. No one who has studied for more than three months in any Class of the College is eligible for admission.

2. For admission, Candidates must be well recommended as Students of good character by the Master of the School in which they have been instructed, or by the Deputy Inspector of the Educational district to which they belong. In the case of passed "Teachers," certificates must be furnished that three years have elapsed since they left the Normal School, or that they have the permission of the Inspector of Schools of their district to apply for entrance to this College.

3. All Candidates must be between 17 and 21 years of age at date of admission to the College, and must furnish a certificate of sound health and physical fitness for the duties of Sub-Overseer (*vide* Form below), no other form will be accepted. A registration fee of three (3) rupees must accompany the Candidate's application for examination.

MEDICAL CERTIFICATE.

I certify, that I have carefully examined _____, that his eye-sight is normal, that he is fairly robust, and his constitution is sound, and that he has no disease, or bodily or mental infirmity, unfitting him now, or likely to unfit him in the future, for active out-door service in the Public Works Department. His age by appearance is about _____ years.

OR

I certify, that I have carefully examined _____, that his eye-sight varies from normal sight in the following respects [here enter them], but that in my opinion [this defect or these defects] are not of such a character as to prove a drawback to his employment in the Public Works Department, on out-door, drawing, or other work, that he is fairly robust, and his constitution is sound, and that he has no disease, or bodily or mental infirmity, unfitting him now, or likely to unfit him in the future, for active out-door service in the Public Works Department. His age by appearance is about _____ years.

If a.—The above certificate must be signed, within a month before date of examination, by a Commissioned Medical Officer, or by a Medical Officer in charge of a Civil Station. No other certificate will be accepted.

4. All Candidates must have a fair knowledge of the Urdu language, and be able to read and write it in the Persian character with ease and accuracy. They must also have a fair elementary knowledge of English, in which language examinations will be conducted.

5. Applications from Candidates for entrance should be submitted during the month of May. None will be entertained after the 31st of that month, nor will any receive attention, unless accompanied by the prescribed fee and certificates detailed in paras. 2 and 3, *vide* Form below.—

Form required to accompany a Candidate's application for admission.

STATEMENT SHOWING AGE, EDUCATION, &c., OF CANDIDATE.

Name.	Date of Birth.	School or Schools at which educated.	Name, date, profession, and residence of Father.	Name, title, and locality of the Offr. or who is to conduct Examination.	Character by School Master or other officer.
1	2	3	4	5	6

(Place and Date)

Signature of School Master
or forwarding officer.

Papers, &c., supplied herewith

- 1 Testimonials of Conduct, as required by Rules
- 2 Baptismal or other certificates of age.
- 3 Medical Certificate, as required by Rules
- 4 Memo. of consent of Officer to conduct Examination
- 5 Fee

6. The subjects for the Entrance Examinations are as below —

	Marks assigned
Arithmetic (<i>Colenso's</i>), the whole,	100
Printing as for Plans,	50
Elementary Geometry (1st and 2nd Books of Euclid),	50
Mensuration of Planes (<i>Tolsoner's</i>),	50
History of India (<i>Keene's</i>),	50
Elementary Geography (<i>S. A. Hall</i> , 1st and 2nd Books),	50
English Dictation,	50
English Colloquial,	50
Total,	450

The examination will be conducted in English and Urdu, marks will be given for hand-writing in all the papers, preference will be given to Candidates answering in English. No qualifying test for admission to the Entrance Examination is required.

* Forms for 3 will be supplied by the College on application.

One-third the full marks in each subject and one-half of the total are required for passing; but the fact of passing the examination will not entitle any Candidate to admission, unless he stands high enough on the list of passed Candidates to be included among the number for whom available vacancies exist at the College.

7. In order that there may be trained men willing to take appointments in all parts of India supplied by the College, the 40 vacancies will be allotted as follows—*N-W. Provinces and Oude and Panjab* 30, *Local Administrations* 10. Should there be an insufficient number of successful Candidates from the Local Administrations, the full number will be made up from the general list in the order of standing in the examination results.

In addition to the 40 men admitted under rule 7, a limited number of Candidates who have passed the Entrance Examination under the usual conditions may be admitted for education, and to obtain certificates as Lower Subordinates, provided that (a), accommodation is available; (b), they pay a fee to be fixed by the Committee of Management not to exceed Rs 20 per mensem. These Students will not draw stipends under rule 11.

8. The examination will commence on 1st Monday of July. As many Candidates as live within reasonable distance of Roorkee will be directed to attend at the College for examination. For those at a distance papers will be sent to other centres, usually to the Head Master of the Zillah School of some selected central districts, or to some suitable officer as arranged by the Principal. These officers will arrange for and conduct the examinations, and forward the Candidate's answers to Roorkee. *Intimation of the results will be sent in each case to the officer conducting the Examination for communication to the Candidate, with an order for admission for the accepted Candidates.*

9. The College Session commences on 1st April. Admitted Candidates should present themselves, with their orders, at Roorkee on that date, or a day or two before. All are required to be present on the 1st April, on penalty of forfeiture of right of admission.

10. *Draftsman and Computer's Class*—Six Students from the most promising at Drawing will be selected at the end of the 1st Year's Course, Lower Subordinate Class. During the second year they will be kept at Drawing, Estimating and Surveying only, they will be kept

for another six months at Drawing and Estimating only in all the branches usually required for the Public Works Department, including the preparation of finished plans from sketches. Should there be no appointments open at the end of the first six months, they will be kept at College until appointments are found, but not longer than another six months, so that the whole Course will not exceed 8 years, including vacations. Qualified Draftsmen and Computers will be granted special certificates before leaving the College.

11. There is a provision of Rs. 4,200 a year in the P. W. Department, and Rs. 600 a year in the Educational Department Budgets for Stipends to Students of these Classes. These are awarded monthly on the standing of the Students in Examination. No man will receive a stipend who has not gained qualifying marks in all subjects for the month in which the stipend is payable. In the Sub-Overseer Classes the stipends are—the first two men at Rs. 10, second two at Rs. 9, third two at Rs. 8, and so on to Rs. 5, all below who qualify will receive Rs. 4 monthly. In the Draftsman and Computer's Class the stipends are—2nd year not exceeding Rs. 12 each; 3rd year not exceeding Rs. 15 each, but the amount to depend on progress made.

12. Students whose conduct, or progress in study is unsatisfactory are liable at any time to be deprived of their stipends in whole or in part, or to be dismissed from the College at the discretion of the Principal.

13. Free quarters are provided, but no member of a Student's family is allowed to reside in them with him.

14. Students pay no fees, but all must provide themselves with books and stationery, and uniforms as directed by the Principal. The probable expense of these may amount to about Rs. 50 during their course of study, and no one should present himself for admission who is not prepared to meet the above charges, as well as those of feeding himself and dressing in decent and clean apparel.

15. Students of these Classes are intended for the Lower Subordinate Grades of the Public Works Department, but appointment is not guaranteed. The pay of the several Grades is as below, consolidated, with certain allowances for travelling.

	Minimum	Quinquennial Increase.	Maximum
Sub-Overseer, 1st Grade,	50	10	70
" 2nd "	35	5	45
" 3rd "	25	5	35
Draftsmen and Computers,	Various.		

16. The College Course* for Sub-Overseers lasts for 2 years, and the Final Examination, on which Certificates will be granted, will be held in March. All who qualify will receive Certificates as Probationary 3rd Grade Sub-Overseers, and will be recommended for appointment to such vacancies in the Public Works Department as may be available from time to time. If all are not absorbed before the succeeding batch are passed, such as remain will be graded by their marks with the new batch and treated with them. The Principal may, however, grant a certificate to a Student after a full year's satisfactory study, as demands for Sub-Overseers are received. To qualify for this indulgence, a Student must have completed his full Drawing and Surveying Course as laid down for the first year, and must have obtained half marks in each subject and two-thirds of the total of the Examinations up to date.

17. All men of these Classes who obtain appointments will be on probation for a year on the works, and their certificates will be completed by the Executive Engineer under whom they are working at the close of it, should he be satisfied with their conduct. It will be open to him to require a further period of probation, or to refuse to complete the certificate in the case of unsatisfactory men. Thus after the year 1890 all Roorkee Sub-Overseer's Certificates to be of value will be countersigned, in the place prepared for it, by an Executive Engineer.

18. Travelling allowance at the rate of two annas per mile by road and double third class fare by rail, for the distance from Roorkee to their respective destinations, will be advanced by the Principal of the College to passed Students on their first appointment to the P. W. Department, to be refunded to him by the Executive Engineers under whom they are appointed to serve.

COURSE OF STUDY

ENGINEER CLASS.

THE Course of Study extends over two years, and comprises the undermentioned ten separate subjects, to which the following numerical values are given —

Subjects	VALUES.	
	First year	Second year.
1. Elementary Pure Mathematics, ...	400	400
2. Mechanics and Conic Sections, ..	280	400
3. Higher Pure Mathematics, ...	...	150*
4. Applied Mechanics,	100	280
5. Civil Engineering,	480	850
6. Drawing,	140	400
7. Surveying,	180	400
8. Experimental Science,	140	800
9. Accounts,	100	100
10. Physical and Sports, ... ..	...	250
Total,	1780	3500

One-third marks in each subject and one-half in the total are entered as "required for passing" at the end of the first year. As the rule, Students failing to obtain this standard will not be allowed to return to College for their second year, but the Principal may permit any promising Student to do so, reporting the case for sanction to the Government, North-West Provinces. If his return is sanctioned, the Student will be fully eligible to compete for one of the guaranteed appointments in his second year.

Obligatory for Higher Standard only.

COURSE OF STUDY,

The marks required at the end of second year for the various certificates are as below. Subject No. 3rd is included in the conditions for the Higher Certificate only. .

- i. To pass for a Certificate of any sort *one-third* marks must be obtained in *each* subject.
- ii. In addition to this, to pass merely for an ordinary Certificate qualifying as Assistant Engineer, *one-half* marks must be gained in the *total*.
- iii. For the Certificate obligatory on all winning guaranteed Government appointments, *one-third* marks in *each* subject and 63 per cent. in total is necessary.
- iv. For the Higher Certificate *one-half* marks must be gained in *each* subject and *two-thirds* in total.

The Final Examination is held in March in each year, and periodical Examinations are held during the course as below.

System of Marking.

The two points aimed at are, first, to keep the Students up to the mark in the first year, and second, that the proportion of marks allotted to each subject shall be, as far as possible, the same in both years, so that the first year's results may give the men a fairly reliable estimate of their position on the list.

Subjects completed or complete as far as they go, *i.e.*, in which there is no repetition in the second year, carry their full first year marks on to the final second year total. These are Nos. 1, 6, 7 and 8.

In the other subjects there is repetition, *i.e.*, fresh examination in the same work in the second year. In these the marks are given as nearly as possible about one-third or one-fourth of the full value in the second year to the first year work, as an incentive to work thoroughly even in the first year, but in the first year, in order to bring these subjects up to their relative value in comparison with the others in the final results, the marks are counted double value. Thus at end of first year the full marks for each subject are rather over half the Final full marks. In Mathematics this could not quite be arranged, but all subjects taken together the difference is not great.

The values of the different branches studied and of the examinations in them are shown in following Tables —

HIGHER PURE MATHEMATICS (150).

(Optional for Higher Standard only)

No student is allowed to take up this subject who has not in his first year obtained at least half marks in each of the subjects of Elementary Pure Mathematics and Mechanics and Conic sections.

Sub-divisions	Text-books and particulars (Of books entered students only are read)	FIRST YEAR				SECOND YEAR			
		During Year		Final Ex- amination	Total	First year marks out of 100	During year		Final Ex- amination
		Date	Marks				Date	Marks	
Co-ordinate Geometry	Tothamster's	..	..	..	..	..	May	10	40
Differential Calculus	Tothamster's	..	..	..	..	..	July	10	40
Integral Calculus	Tothamster's	..	..	..	..	..	August	10	40
Total Second Year's Marks—(75 required for passing)		..	..	..	..	..	..	30	120

SECOND YEAR										
Sub-division	Text-books and particulars	FIRST YEAR		Grand Total	First year marks obtained on this examination	During year		Final Examination	Grand Total	
		During year				During year				
		Date	Marks			Date	Marks			
Sub-division	Building Materials } and Earthwork, } Carpentry, } Masonry, } Ironwork, } Materials & Gen- } eral Construction, } Buildings & Bridges, } Roads and Railways, } Hydraulic Works, } Special Construc- } tions, } Estimating, }	Roorkee Treatise, Vol. I, .. " " " " .. Hewitt's "Iron and Steel Manufacture," .. This is the five above sub-divisions generally Roorkee Treatise, Vol. II, .. " " " " and Lectures on Irrigation Works by Col. Randall, .. This is the above three sub-divisions generally A series of Estimates in— Buildings, .. Bridges, .. Earthwork, .. Ironwork, .. Gooden's Elements and rules in Erecting Workshops, .. Practical Instruction, .. Notes given in February, .. Project for part of a road, canal, &c., with Drawings and Estimates, .. In preparation Nov. to February, ..	May May June July August November December December February	40 30 30 30 30 30 15 15 100	100	240	May June July November February February	30 30 30 30 100 150	240	850
	Total First Year's Marks—(158 required for passing),		..	..	160	400	280	280	850
	Total Second Year's Marks—(288 required for passing),		..	..	..	..	..	..	280

DRAWING (400).

Sub-division	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Final examination	Total	During year		Final examination	Grand Total
		Date	Marks			Date	Marks		
General Engineering Drawing,	<p>Revises Manual of Drawing. Students are expected to complete the regular detailed course, working in the College, by end of August in second year. Any Drawings remaining after this will be finished in College, but will only receive one-third value. The whole course is valued at 100 marks.</p>		40						
		June July August	20 20 30	80		May June August	20 20 30	80	
Examinations,	There will also be periodical Examinations of laid down,					February	100		
Project,	All Drawings connected with,								
Total First Year's Marks—(46 required for passing),		.. ..	110	80	140				
Total Second Year's Marks—(188 required for passing),		.. ..	..	..	..		280	30	400

SURVEYING (400).

SURVEYING (contd.)									
Sub-division	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Private Examination	Total	During year		Private Examination	Total
		Date	Marks			Date	Marks		
Land Adjustment of Instruments, .. Plane Surveys, .. Levels, .. Traverse, .. Curves, ..	College Manual of Surveying Instruction in the field, and independent surveys of all kinds,	{ Oct to Feb.	10	25	25	180			10
			65						
			25						
			15						
			20						
Examination Observations, .. Examinations, .. Project, ..	A Survey of about 5 square miles per Student for the project given out, ..		135	25	180			15	175
Total First Year's Marks—(38 required for passing),		..	..	..	..	..	..	..	..
Total Second Year's Marks—(122 required for passing),		..	..	..	..	..	..	..	..
						160			400

EXPERIMENTAL SCIENCE (300)

171

COURSE OF STUDY,

Sub-divisions	Text-books, and particulars	FIRST YEAR				SECOND YEAR			
		During year		Total	Grand Total	During year		Total	Grand Total
		Date	Marks			Date	Marks		
Chemistry and Physics are lectured on in alternate years,	Gaseous Physics by Atkinson, Inorganic Chemistry, Wilson's, A course of Lectures on Chemistry, Heat, Electricity, &c., and also Instruction on Building Materials and Analysis. Notes on Chemistry of Building Materials, Chatham Manual, and Analysis of Lime and Cement Stones, Thomson's, .. A Course of Lightning Conductor Testing, .. Lectures and practical instruction in the Paratype process of copying plans, ..	May	25	40	140	May	25	140	300
		July	25			July	25		
		August	25			August	25		
		October	25			October	25		
Paratype,						July	10		
						Current year's work, Past " "		40	50
Total First Year's Marks—(40 required for passing),			100	40	140				
Total Second-Year's Marks—(100 required for passing),			..	..	..	

The Science course comprises the two subjects, Chemistry and Natural Philosophy. These are taught in alternate years to all the students of both years at the same time. In Chemistry the last month, July to August, is occupied with Practical Analysis, and the October examination is mainly in this branch of the subject. At the Final Examination the students of the Second Year are examined in the subjects studied in their First Year, to which subject 50 marks are awarded.

ACCOUNTS (100)

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Final mark	Total	During year		Final mark	Grand Total
		Date	Marks			Date	Marks		
	<i>Note</i> - The Course has not yet been laid down.		50	50				50	
Total First Year's Marks—(33 required for passing)		..	50	50	100				
Total Second Year's Marks—(33 required for passing)		..	..	..	..			50	100

PHYSIQUE AND SPORTS (250).

Sub-divisions		Detail		Second Year Marks
Health,	Marks awarded by Medical Officer or Civil Surgeon in charge of College,	100
General,	Probable fitness for Department,	75
Athletic Sports,	Proficiency in Games, &c.,	75
			Total,	250

Distribution of Studies, Engineer Class.

71

COURSE OF STUDY,

Subjects.		APRIL TO AUGUST 1874.			OCTOBER 1874 TO MARCH.		
		10 to 12	13 to 1.	1-30 to 4	10 to 19	13 to 1	1-30 to 4.
<i>First Year</i>							
Monday,	..	Mechanics.	Science or Civil Engineering	Drawing.	Surveying.	Mathematics	Civil Engineering
Tuesday,	..	Mechanics.	Science	Civil Engineering.	Surveying.	Science.	Appd. Mechanica.
Wednesday,	..	Mechanics.	Mechanics.	Drawing	Surveying.	Surveying	Drawing.
Thursday,	..	Mechanics.	Science or Civil Engineering	Civil Engineering	Surveying	Mathematics	Civil Engineering
Friday,	..	Mechanics.	Science	Drawing	Surveying.	Science.	Appd. Mechanica.
Saturday,	..	Drawing.	Drawing		Drawing.	Drawing	
<i>Second Year</i>							
Monday,	..	Applied Mechanical Engineering	Science or Civil Engineering	Drawing.	October	OCTOBER TO MARCH.	
Tuesday,	..	Mathematics.	Science	Drawing	November	Surveying, Ground Tracing and Practical Analysis.	
Wednesday,	..	Mathematics.	Mathematics.	Civil Engineering	December.	Project Survey and preparation complete by February.	
Thursday,	..	Applied Mechanics.	Science or Civil Engineering	Drawing	January.		
Friday,	..	Mathematics.	Science.	Civil Engineering	Feb to March	Revision.	
Saturday,	..	Drawing	Drawing				

UPPER 'SUBORDINATE CLASS.

Study at the College, extending over two *Annual Sessions*, the subjects undermentioned, to which are attached numerical values here set down.

Subjects.				VALUES.	
				First year	Second year.
1.	Mathematics,	..	..	220	400
2	Civil Engineering,	{ Part I,	...	120	180
		{ Part II,	...	70	420
3.	Drawing,	...	...	120	800
4	Surveying,	...	...	120	250
5.	Accounts,	...	...	100	100
6.	English,	...	...	30	50
7.	Physique and Sports,	..	...	...	150
Total,				780	1850

One-third marks in each subject and one-half in the total are entered as "required for passing" at the end of the first year. As a rule, Students failing to obtain this standard will not be allowed to return to College for their second year, but the Principal may permit any promising Student to do so, reporting the case for sanction to the Government North-West Provinces. If his return is sanctioned, the Student will be fully eligible to compete for one of the guaranteed appointments in his second year.

To qualify for the *Ordinary Certificate* (required for all Overseers) the Student must, at the Final Examination, gain not less than *one-half* (825) the total number of marks, and *one-third* of the number allotted to each of the subjects above specified.

For the *Higher or College Certificate*, it is necessary to gain *three-fifths* (1110) of the total, and *one-half* the marks attached to each subject. This Certificate exempts the holder from any further *theoretical Examination* for promotion to the rank of Sub-Engineer.

The Annual Examination is held in the month of March, and Periodical Examinations are held during the Session as below.

MATHEMATICS (400).

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Time of examination	Total	First year marks out of 100	During year		Total marks out of 100
		Date	Marks				Date	Marks	
Arithmetic,	{ Colenso's Arithmetica (The whole book).	April	20	40	60				
Geometry,	{ Cape's Geometry. (Chapters 1, 2, 3 and 6).	May	20	30	50				
Algebra,	{ Colenso's Algebra, Part I, (to the end of Quadratic Equations).	June	20	30	50				
Measurement,	{ Todhunter's Measurement for Engineers. (The whole book).	July	20	40	60		July	10	30
Trigonometry,	{ Todhunter's Trigonometry for Engineers. (First 4 Chapters).						May	10	50
Total First Year's Marks—(73 required for passing),					320	110			
Total Second Year's Marks—(133 required for passing)					..	110		30	400

CIVIL ENGINEERING, PART I. (180).

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Final Examination	Total	During year		Final Examination	Grand Total
		Date	Marks			Date	Marks		
Building Materials,	Roorkee Treatise, Vol. I, Sec. I. Explained by lectures, and inspection of specimens in museum, and visits to workshops, kilns, &c., about Roorkee, &c.								
	Roorkee Treatise, Vol. I, Sec. II, and Vol. II, Sec. VI	June	20	10	30			10	
Masonry,	Explained by lectures, inspections of any work in progress, and practice in building walls flat and relieving arches, with bricks laid dry.	July	20	10	30			10	
Carpentry,	Roorkee Treatise, Vol. I, Sec. III. Explained by lectures and models, and visits to the workshops.	August	20	10	30			10	
Barthwork,	Roorkee Treatise, Vol. I, Sec. IV.	December	20	10	30			10	
Bridges,	Roorkee Treatise, Vol. II, Sec. VII.					July	10	10	
Railways,	Roorkee Treatise, Vol. II, Sec. IX.					November	10	10	
Roads,	Roorkee Treatise, Vol. II, Sec. VIII.					January	10	10	
Mechanics,	Jameson's Elementary Mechanics, ..							20	
Total First Year's Marks—(40 required for passing),		..	..	..	120			30	150
Total Second Year's Marks—(40 required for passing),		..	..	..	60			30	90

CIVIL ENGINEERING, PART II (420).

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR				Grand Total
		During year		Final Ex- amination	Total	During year		Final Ex- amination	Total	
		Date	Marks			Date	Marks			
Estimating.	A progressive series of Estimates of buildings, bridges, and earth-work Instruction by lectures, study of "Key's Examples of Estimating," and practice.									
Applied Mechanics.	Jamieson's Elementary Mechanics Lectures on stresses in the simplest structures and application of formulae to calculate windings of beams, joints, and simple trusses.									
Hydraulics.	Lowe's Hydraulics.									
Laying out Curves.	Under instruction on the ground, for a month, followed by an Examination of each Student separately, also on the ground, as well as in theory.									
Ground Tracing.	Instruction on the ground, followed by an Examination of each Student separately, also on the ground.									
						April	10			
						May	10			
						June	10			
						July	10			40
						June	15			
						August	15			30
						August	10			15
						February	-			20
						February				20

Each Student will keep a Note-book for recording descriptions and sketches of any materials, manufactures or works visited by him. Advantage will be taken of every work of repair or construction, under execution in or near Bootrees, or of suitable examples in the workshops, for careful inspection, both under instruction of a Master, and independently. Full notes and sketches of these are to be recorded by Students in their Note-books, which are to contain no transcripts from their Text-books. All sketches should be done in pencil, and the date of each visit to a work invariably recorded at the head of the notes advertising to the same. These Note-books will be inspected once a month, and marks will be accorded at the end of each session.

Project for part of a Road, Building, &c., with Drawings and Estimates, ..

Note-Books,

Project,

Total First Year's Marks—(28 required for passing),	..	..	..	70	35
Total Second Year's Marks—(143 required for passing),	..	..	..	..	35
				135	290 420

The Student is expected in his First Session to have learned the rudiments of Civil Engineering theory in regard to Building Materials, Earthwork, Carpentry and Masonry to be able with his own hands to lay bricks, in walls and arches. to understand the details of all ordinary joints: to have inspected all Engineering works in progress in Bootrees, and made useful notes on these.

In his Second Session, he will continue to study the Construction of Buildings, Bridges, Roads and Railways. to inspect works and make notes on them. he will prepare a series of Estimates. he competent to lay out ordinary buildings on the ground. and perfect himself in laying out curves also on the ground. he will also prepare a simple Project, with design, plan and estimate for some work selected for the year.

OFFICE SUBORDINATE CLASS.

221

Handtype,	Lecture and practical instruction in the Paratype process for copying plans,	June	5			July	10		
Topographical,	Survey Signs, ..	June	10						
	Specimen of a Survey from copy, ..	June							
Free-hand,	Survey with Longitudinal Section, ..	November	10						
	Specimen of a Canal Survey with Longitudinal Section, ..	November							
Isometrical,	Elementary Buildings from copies, and sketches from models in Museum, ..	February	10						
	Isometrical Projection from Orthographic plans and models, ..	February							
Theory,	Examination, ..	December	5	15		July December	10 10	20	
Total First Year's Marks—(40 required for passing),		..	..	..	130	130			
Total Second Year's Marks—(100 required for passing),		..	..	..	..	120	160	80	300

SURVEYING (250).

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Final Examination	Total	During year		Final Examination	Grand Total
		Date	Marks			Date	Marks		
Surveying generally,	Beetee Manual, No VII, (Col. Purbeck) is the text-book for all Surveying								
Chain Survey,	A Survey under instruction, followed by an independent Survey executed by students in parties of three,	October		10	10	October		40	
Principles of Mensuration, and Chain Survey,	A Survey under instruction, followed by an independent Survey executed by students in parties of three, "	October		40	40				
Levelling and Contouring,	Do do, in 1st Session,	November				November	10	40	
Theodolite Traverse, and Plane Table,	Do do, (large) in 2nd Session,	December		30	30				
Adjustment of Instruments, Examination in Theory,	Personal instruction, followed by an Examination of each student separately with instruments, "					February		25	
	By Examination papers, "	December	10	50	40	December	15	45	
Total First Year's Marks—(40 required for passing),		.. ..	.. ..	.. ..	130			60	
Total Second Year's Marks—(35 required for passing),		.. ..	.. ..	.. ..	..		35	105	250

In the cold weather of the First Session, Surveying with Chain, with Chain and Compass, Plane Table and Traversing with Theodolite, also Levelling, will be practised, first under instruction, and then independently. In the Second Session, a large Survey with the Theodolite will be executed independently, and Levelling will also be executed, as well as a Contour and Plane Table Survey.

ACCOUNTS (100).

Sub-divisions	Test-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Final Ex- amination	Total	First year marks out- standing	During year		Final Ex- amination
		Date	Marks				Date	Marks	
	<i>Note</i> —The Course has not yet been laid down		50	50					50
	Total First Year's Marks—(88 required for passing).	..	50	50	100	50			50
	Total Second Year's Marks—(35 required for passing).	..	..	..	..	50			100

ENGLISH (50)

Sub-divisions	Test-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Final Ex- amination	Total	First year marks out- standing	During year		Final Ex- amination
		Date	Marks				Date	Marks	
	Totaled by Examinations in Writing from Dictation, and in Reading. ..			50	50				35
	Total First Year's Marks—(10 required for passing).	..	..	..	50	15			35
	Total Second Year's Marks—(16 required for passing).	..	..	..	..	15			50

COURSE OF STUDY,

PHYSIQUE AND SPORTS (150).

Sub-divisions	Detail	Second Year Marks
Health, ..	Marks awarded by Medical Officer or Civil Surgeon in charge of College, ..	20
General, ..	Probable fitness for Department, ..	20
Athletic Sports, ..	Proficiency in Games, &c, ..	20
Total, ..		120

Distribution of Studies, Upper Subordinate Class.

Month.	First Year.			Second Year		
	10 to 12	12 to 1.	1-30 to 4	20 to 12.	12 to 1	1-30 to 4.
April.	Algebra.	Geometry	Throughout the Session. Drawing Monday Drawing Tuesday Civil Engineering Wednesday Drawing Thursday Drawing Friday No work in Class } Saturday rooms	Estimating and Applied Mechanics	Trigonometry	Throughout the Session. Drawing Monday Drawing Tuesday Civil Engineering Wednesday Drawing Thursday Drawing Friday No work in Class } Saturday. rooms
May.	Algebra	Measurement		Applied Mechanics	Trigonometry	
June.	Measurement.	Mechanics.		Estimating	Applied Mechanics	
July.	Measurement.	Mechanics.		Estimating	Applied Mechanics	
August.	Mechanics	Logarithms		Applied Mechanics	Hydraulics	
September.	Surveying	Surveying.		Surveying and Levelling	Surveying	
October.	Surveying	Surveying.		Surveying and Levelling	Surveying and Levelling	
November.	Surveying	Surveying		Surveying and Levelling	Surveying and Levelling	
December.	Surveying	Surveying		Surveying and Levelling	Surveying and Levelling	
January.	Surveying	Surveying		Surveying and Levelling	Surveying and Levelling	
February.	Surveying	Surveying		Surveying and Levelling	Surveying and Levelling	

"The Surveying Course commences in October for both Classes, that is, for First and Second Year Students.

The Estimating Course commences the first Tuesday in April, and continues on Tuesdays and Thursdays from 10 to 12 A.M. The Periodical Examinations will be on the dates named in the Almanac.

All the Drawings are to be executed in the Drawing Hall, during the hours specified for this study no drawings done in the Student's quarters will receive marks.

Visits to works in progress in Booklee &c in the immediate neighbourhood will be made as opportunity offers, and when arranged by the Principal or Head Master.

LOWER SUBORDINATE CLASS.

The Course of Study comprises the thirteen subjects undermentioned, to which the values given are attached—

Subjects	VALUES.	
	First year	Second year.
1. Elementary Mathematics,	260	320
2. Mechanics, .. .. .	..	50
3. Applied Mechanics, .. .. .	..	80
4. Natural Science,	80	80
5. Drawing,	220	350
6. Surveying,	260	350
7. Estimating, .. .. .	..	160
8. Languages,	100	150
9. Materials and Construction,	160	150
10. Practical Engineering, .. .. .	..	100
11. Workshops,	50	..
12. Process Works, .. .. .	..	20
13. Physique, .. .. .	..	120
Total,	1070	1670

To qualify for the *Ordinary Certificate as 3rd Class Sub-Overseer*, Students must gain at least *one-third* marks in each subject, and *one-half* of the total marks during the first year.

During their second session the Students will be further instructed in the subjects above noted.

The details of the Course of Study and the dates of the several Examinations, with the values assigned to them, are shown in the following Tables.—

LOWER SUBORDINATE CLASS.
ELEMENTARY MATHEMATICS (320).

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Total	Final Ex- amination	During year		Final Ex- amination	Grand Total
		Date	Marks			Date	Marks		
Arithmetic, ..	Colson's Arithmetic, ..	December	30	30	40	July	30	40	320
Algebra, ..	Hutton's Algebra, ..	February	20	40					
Geometry, ..	Willson's Euclid, ..	May	20	40					
Trigonometry, ..	Techener's Trigonometry for Begin- ners, ..	April	20	40	..	..	..	..	..
Mensuration, ..	Techener's Mensuration for Begin- ners, ..								
	Booth's Mathematical Tables.								
Total First Year's Marks—(86 required for passing), ..		..	90	170	266				
Total Second Year's Marks—(106 required for passing), ..		..	..	..	..

MECHANICS (50)

Exams, ..	No. XIV, Simple Applied Mechanics,					November	30	50
Total Second Year's Marks—(16 required for passing), ..		..	..	..	..		20	50

LOWER SUBORDINATE CLASS.

121

LOWER SUBORDINATE CLASS. **APPLIED MECHANICS (30).**

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Final examination	Total	First year marks obtained on	During year		Final marks obtained on
		Date	Marks				Date	Marks	
Stability of Structures	No XIV, Simple Applied Mechanics,						November	15	
Strength of Materials,	Gooden's Mechanics,						February	10	
Hydro-Mechanics,	Ronke's Manual of Hydraulics, .. Students will also be practised in taking Discharges of rivers, canals and distributaries								
Total Second Year's Marks—(30 required for passing),			.. ..	.. ..	.. ..			25	50

NATURAL SCIENCE (30)

Physiology, ..	Getko's Physical Geography, ..	February	10	20					
Total First Year's Marks—(10 required for passing),		.. ..	10	20	30				
Total Second Year's Marks—(10 required for passing),		.. ..	.. ..	.. ..	.. ..				30

* To be inserted.

LOWER SUBORDINATE CLASS.
DRAWING (350).

LOWER SUBORDINATE CLASS.

Sub-divisions	Test-books and particulars	FIRST YEAR				SECOND YEAR				Grand Total	
		During year		Total	During year		Total				
		Date	Marks		Date	Marks					
Theory of Drawing, Course to be drawn in College	<i>Exercises Manual of Drawing</i> Term Examination, Students are expected to complete the regular detailed course for each year, working in the College, by the end of June. Any drawings remitte- ing after this date may be finished in College during the second year, but will only receive one-half value in marks	March	20	100	25	25	25	70	250	180	850
Elementary and General, .. Topographical, .. Isometrical, .. Free-hand and Model, .. Designing, .. Architectural, .. Shadows, ..				15	250	250	250	250	250	250	250
Total First Year's Marks—(73 required for passing), ..		..	250	250	250	250	250	250	250	250	250
Total Second Year's Marks—(116 required for passing), ..		..	..	..	..	..	..	..	..	..	..

**LOWER SECONDARY CLASS,
SUEVING (350).**

[illegible]

- This will involve a practical demonstration in the field and should thoroughly test the experience of each candidate. It will last about 10 minutes and should be done in the field.

ESTIMATING (150)

[illegible]

LANGUAGE (150)

Sub-division	Text-books and questions	FIRST YEAR				SECOND YEAR			
		During year		Total	Marks	During year		Total	Marks
		Date	Marks			Date	Marks		
English,	<i>College Text-books</i> Students will be examined in English dictation, reading and in translation from English into Urdu and from Urdu into English.	December	80	80		May	100		
Total First Year's Marks—(80 required for passing),		..	..	80	100				
Total Second Year's Marks—(80 required for passing),		..	..	..	..		100		150

MATERIALS AND CONSTRUCTION (150)

Materials,	..	Roquette Manual of Materials,	..	January	25	30				
Barbwire,	..	" "	..	March	25	30				
Carpentry,	..	" "	..	April	16	30				
Masonry,	..	" "	..	June	20	30				
Ironwork,	..	" "	..	June	10	30				
Students are expected to be familiar with the specimen of Indian Building Materials in the College and used in Station work, and with the simple details of practical work carried on at the Canal Foundry, the brick-works and works in progress in the Station.										
Total First Year's Marks—(80 required for passing),		..	..	90	90	180				150
Total Second Year's Marks—(80 required for passing),		100			

LOWER SUBORDINATE CLASS.
PRACTICAL ENGINEERING (100).

Exercises	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Final Examination	Total	First Year Marks out of 100	During year		Final Examination
		Date	Marks				Date	Marks	
Buildings,	Reed's Manual of Building,	"					November	20	20
Bridges,	" " Masonry,	"					January	20	20
Roads,	" " Roads,	"					February	20	20
Hydraulic Works,	Selections from the <i>Engineering Works</i> ,	"							
	Students will be taught the special points of importance to Lower Subordinates in the Engineering of the branches of work noted above								
Total Second Year's Marks—(35 required for passing),								60	40
									100

LOWER SUBORDINATE CLASS.

WORKSHOPS (100).

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR				Grand Total
		During year		Total	During year		Total	Grand Total		
		Date	Marks		Date	Marks				
Carpenter's, Forge, Turning and Fitting, Foundry,	Mitchell's Forty Lessons in Carpentry, <i>Knight's Blacksmithing</i> , " " Mitchell and Davey's Forty Lessons in Engineering Workshop Practice, <i>Spratt's Casting and Foundry</i> , .. The marks for these courses will be given as follows — Practical work during the Course, 80 per cent. of marks Concluding Examination in May, 80 per cent. of marks.	May	80							
Total First Year's Marks—(16 required for passing)		..	80	80						

LOWER SUBORDINATE CLASS. PROCESS WORK (20).

Sub-division	Test-books and particulars	FIRST YEAR				SECOND YEAR				Grand Total
		During year		Final Examination	Total	During year		Final Examination		
		Date	Marks			Date	Marks			
Phototype,	O'Neill's Phototype Printing Process, Marks will be given as follows — Practical work during the course, 15 Concluding Examination, 5 Total 20					June	20		20	
Total Second Year's Marks—(6 required for passing),										
									20	

PHYSIQUE (120).

Sub-division	Details.	Second Year Marks.
Athletic Sports, Health, General Fitness,	Proficiency in Games, &c., Marks awarded by Medical Officer or Civil Surgeon in charge of College, Fitness for the Department,	20 20 60
	Total,	120

ELEMENTARY MATHEMATICS (400).

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year		Final Ex- amination	Total	During year		Final Ex- amination	Total	During year		Final Ex- amination	Total
		Date	Marks			Date	Marks			Date	Marks		
Arithmetic, ..	Colese's Arithmetic,			40									
Algebra, ..	Todhunter's Algebra for Colleges,			90									
Geometry, ..	Todhunter's Elements of Euclid,			90									
Trigonometry, ..	Todhunter's Plane Trigonometry,			90									
Measurement, ..	Todhunter's Mensuration for Be- ginners,			90									
	Chambers' Mathematical Tables												
Total First Year's Marks—(180 required for passing),				400	400								
Total Second Year's Marks—(carried forward), ..				..					400				400
Total Third Year's Marks—(carried forward), ..				..	..	..	..	..	..				400

ENGINEER CLASS. HIGHER MATHEMATICS (160).

Sub-divisions	Text-books and particulars.	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year		Final Ex- amination	Total	During year		Final Ex- amination	Total	During year		Final Ex- amination	Total
		Date	Marks			Date	Marks			Date	Marks		
Co-ordinate Geo- metry.	Todhunter's Conic Sections.	Dec	10	50									
Conic Sections, ..	Drew's Geometrical Conic Sec- tions.												
Differential Cal- culus.	Todhunter's Differential Cal- culus.					Dec.	20	80					
Integral Calculus.	Todhunter's Integral Calculus.												
Total First Year's Marks—(80 required for passing),			10	80	80								
Total Second Year's Marks—(80 required for passing),			..	..	..					
Total Third Year's Marks—(60 required for passing),			..	..	..								160

If A—The Calculus is an optional course and obligatory for the Higher Standard Certificate only. Students who take up the Calculus and give less than the marks required for passing, will not receive any marks for this subject in their second and third years, nor will the marks allotted for Calculus be included in the Total left marks of their Courses.

MECHANICS (260).

Mechanics, Part I, {	Hicks' Elementary Dynamics.	{		Jan'y	120																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
----------------------	-----------------------------	---	--	-------	-----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

ENGINEER CLASS.
APPLIED MECHANICS (310).

Sub-division	Text-books and particulars	FIRST YEAR			SECOND YEAR			THIRD YEAR			Grand Total
		During year	Final Ex-aminations	Total	During year	Final Ex-aminations	Total	During year	Final Ex-aminations	Total	
		Date	Marks		Date	Marks		Date	Marks		
Stability of Structures, Strength of Materials, Mechanics,	Rozeles Applied Mechanics,	March	40	60	March	30	80	Jan'y 28	180		310
	Goodere's Elements of Mechanics, Love's Hydraulics, Bennet's Elementary Hydrostatics, •	April	80	50	May	10	20				
Hydro-Mechanics,	Students will also be practised in taking Discharges of Rivers, Canals and Distributionaries										
	Calculations, •							May	80		180
Project,											
Total First Year's Marks—(60 required for passing), ••			70	110							180
Total Second Year's Marks—(75 required for passing),			••	••		40	100				175
Total Third Year's Marks—(103 required for passing),			••	••		••	••			115	310

• The Tinsman Gold Medal is awarded for excellence in this Project, upon a total of 200 matches. The Project includes a Survey, Design, Plan, Estimate and Report of stone work, — Road, Railway, Canal, Building, etc., as laid down for the year

TESTING (100)

	FIRST YEAR	SECOND YEAR	THIRD YEAR	
	During year Date	During year Date	During year Date	
	Marks	Marks	Marks	
	Total marks obtained	Total marks obtained	Total marks obtained	
Sub-division				
Year-books and particulars				
Specification, Quantities, Notes, Project,	Brockee Manual of Estimating. Students will be given several trial Examinations while studying this subject. A complete Estimate for the work selected as the Project for this year. <i>See Note under Applied Mechanics.</i>			
				100
				80
				90
			
				100

ACCOUNTS (09)

Accounts,	Public Works Department Code, Ingulis' Book-keeping.	July.	20	80
Several trial examinations will be given in this subject.				
Total Third Year's Marks—(16 required for passing).		..	20	80

PRACTICAL ENGINEERING (600)

Sub-division	Text-books and particulars	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year		Total		During year		Total		During year		Total	
		Weeks	Final Ex-amination	Weeks	Final Ex-amination	Weeks	Final Ex-amination	Weeks	Final Ex-amination	Weeks	Final Ex-amination	Weeks	Final Ex-amination
Buildings,	Booker's Manual of Buildings,												
Bridges,	" Bridges,												
Roads,	" " Roads,												
Railways,	" " Railways,												
Tunnels and Min-													
ing,	Greenwell's Mine Engineering,												
Hydraulic	Monroe's Manual of Irrigation												
Works,	Works,												
Sanitary Engi-	Reade's Lectures, S M E,												
neering,	Reade's Lectures, S M E,												
Water Supply,	Reade's Lectures, S M E,												
Electrical Engi-	Monroe's Water Supply of												
neering,	Harris and Crockett's Electrical												
	Engineering,												
	Monroe and Jamieson's Pocket												
	Book,												
Notes on Works,	Notes on works in progress,												
"Project,	The Engineering for the work												
	given out for the year as a												
	Project,												
Total Second Year's Marks—(86 required for passing),		..	..	..	..	150	110	260	180	325	145	465	600
Total Third Year's Marks—(300 required for passing),		..	..	..	..	..	..	..	..	..	..	..	..

* See Note on Applied Mathematics

ENGINEER CLASS. PRACTICAL ENGINEERING (600)

Sub-division	Text-books and particulars	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year		Final Ex-amination	Total	During year		Final Ex-amination	Total	During year		Final Ex-amination	Total
		Days	Weeks			Date	Weeks			Date	Weeks		
Buildings, Bridges, Roads, Railways, Tunnels and Min- ing.	Booth's Manual of Buildings, " " Bridges, " " " Roads, " " " Railways, " " " Tunnels and Min- ing.					Dec Jan Feb Mar	15 20 20 20	15 20 20 20	15 20 20 20			50	50
Hydraulic Works,	Booth's Manual of Irrigation Works, Randall's Lectures, S. M. E., Baldwin, Latham's Lectures, S. M. E., Moncrieff's Water Supply of S. M. E., Harricks and Cantonments, S. M. E., Slingo and Brooker's Electrical Engineering, Mansie and Jamieson's Pocket Book, Notes on works in progress, The Engineering for the work given out for the year as a Project,					Apr June	15 20	15 20	15 20	Dec Feb May	25 20 20	25 20 20	50
Electrical Engi- neering,						June	60			May	60	60	60
Notes on Works, Project,													
Total Second Year's Marks—(86 required for passing),			..	..	..		150	110	260			180	180
Total Third Year's Marks—(200 required for passing),			..	..	..		..	..	..		835	145	600

* See Note on Applied Mathematics

ENGINEER CLASS.

122-4

ENGINEER CLASS. LABORATORIES (100)

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		First year		Final Ex-amination	Total	Second year		Final Ex-amination	Total	Third year		Final Ex-amination	Grand Total
		Date	Marks			Date	Marks			Date	Marks		
Chemical,	<i>Thorp and Meir's Qualitative Analysis,</i> .. <i>Thomson's Analysis of Lime and Cement Stones,</i> ..												
Physical,	<i>Glazebrook and Shaw's Practical Physics,</i> ..					May	80						
Electrical,	<i>Wheeler's Electrical Laboratory, Notes and Expts.,</i> ..									June	80		
Mechanical,	<i>Unwin's Testing of Materials of Construction,</i> .. The marks for these courses will be given as follows — Practical work during the course, 80 per cent. of marks Considering Examination in May and June, 20 per cent. of marks												
Total Second Year's Marks—(16 required for passing),			..	..	..				80				
Total Third Year's Marks—(28 required for passing),			..	..	..				80			80	100

COPIES TO BE MADE

1897

ENGINEER CLASS.
WORKSHOPS (150).

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year	Final Ex- amination	Total	During year	Final Ex- amination	Total	During year	Final Ex- amination	Total	During year	Final Ex- amination	Total
		Date	Marks		Date	Marks		Date	Marks		Date	Marks	
Carpenter's,	Mitchell's Forty Lessons in Car- pentry Workshop Practice, ..	June	50										
Forgy,	Knight's Mechanics, ..												
Boatbuilding,	Sprydon's Caddy and Found- ry, ..												
Turning and Fit- ting,	{ Knight's Mechanics, .. { Mitchell and Davey's Forty { Lessonman Engineering Work- shop Practice, ..												
	The marks for these courses will be given as follows —												
	Practical work during the course 80 per cent. of marks												
	Concluding Examination in June, 20 per cent. of marks												
	Total First Year's Marks—(16 required for passing), .		50	..		..	..		50	..		..	100
	Total Second Year's Marks—(28 required for passing),		..	..		..	..		..	..		..	50
	Total Third Year's Marks—(50 required for passing),		..	..		..	..		..	..		..	150

**ENGINEER CLASS.
PROCESS WORK (40).**

	FIRST YEAR	SECOND YEAR	THIRD YEAR	
	During year Date Marks	During year Date Marks	During year Date Marks	
	Final Ex- amination	Final Ex- amination	Final Ex- amination	
	Total	Total	Total	
Text books and portfolios				Grand Total
Photography,				Printed
Engravings,				Marks
O'Neill's Remedy for Printing Process.				Date
Process engraving marks are awarded as follows — During the Practical work course.				Dec
Closing Examination in February—December .. 5				20
Total, .. 30				20
N.B.—Only a limited number of Students can be trained in Photography. The marks allotted for this subject will be extended from the totals of Students who have not been instructed.				20
Total Second Year's Marks—(6 required for passing),	50
Total Third Year's Marks—(9 required for passing),	40

ENGINEER CLASS. PHYSIQUE (250).

Sub-divisions.	Detail	Total Test Marks.
Gymnastics, ..	Volunteers are not required to pass in Gymnastics and are marked for drill, shooting, &c., ..	35
Athletic Sports, ..	Proficiency in Games, &c.,	75
Health, ..	Marks awarded by Medical Officer or Civil Surgeon in charge of College, ..	75
General Fitness,	Fitness for the Department,	75
	Total, ..	250

TELEGRAPH CLASS.

ELEMENTARY MATHEMATICS (400)

Sub-division	Text-books and particulars	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year		Period Ex-amination		During year		Period Ex-amination		During year		Period Ex-amination	
		Date	Marks	Total	First year marks out of 400	Date	Marks	Total	Second year marks out of 400	Date	Marks	Total	Third year marks out of 400
Arithmetic,	.. Colenso's Arithmetic,		40										
Algebra,	.. Todhunter's Algebra for Colleges,		90										
Geometry,	.. Todhunter's Elements of Euclid,		90										
Trigonometry,	.. Todhunter's Plane Trigonometry,		90										
Measurement,	.. Todhunter's Measurement for Beginners,		90										
	.. Chambers' Mathematical Tables.												
Total First Year's Marks—(135 required for passing),				400	400								
Total Second Year's Marks—(carried forward),					400				400				
Total Third Year's Marks—(carried forward),												400	400

TELEGRAPH CLASS. HIGHER MATHEMATICS (160)

Sub-divisions	Test-titles and particulars	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year		Final Ex- amination	Total	During year		Final Ex- amination	Total	During year		Final Ex- amination	Total
		Date	Marks			Date	Marks			Date	Marks		
Co-ordinates Geo- metry, .. Conic Sections, ..	Toddhunter's Conic Sections, Dewey's Geometrical Con- Sec- tions, ..	Dec.	10	50									
Differential Cal- culus, ..	Toddhunter's Differential Cal- culus ..	..	..	..		Dec.	20	80					
Integral Calculus,	Toddhunter's Integral Calculus,	..	..	..						
Total First Year's Marks—(20 required for passing),			10	50	60								
Total Second Year's Marks—(80 required for passing),			..	..	..		20	80	160				
Total Third Year's Marks—(80 required for passing),			..	..	..		..	..	..				160

N.B.—The Calculus is an optional course and obligatory for the Higher Standard Certificate only. Students who take up the Calculus and give less than the marks required for passing, will not count any marks for this subject in their second and third years, nor will the marks allotted for the Calculus be included in the total full marks of their course.

MECHANICS (260)

Mechanics, Part I	Huxley's Elementary Dynamics,	Jan	40	190									170
" " II	" "	April	20										
Total First Year's Marks—(60 required for passing),			60	190	160								
Total Second Year's Marks—(carried forward),			..	..	..					
Total Third Year's Marks—(80 required for passing),			..	..	..		..	..	..				260

TELEGRAPH CLASS. APPLIED MECHANICS (260).

Sub-Division	Test-books and References	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year		Final Ex- amination	Total	During year		Final Ex- amination	Total	During year		Final Ex- amination	Total
		Date	Marks			Date	Marks			Date	Marks		
Stability of Structures.	Routledge Applied Mechanics, ..	March	40	60		March	20	80		Jan'y.	25	80	
Strength of Materials.	"					May	10	20					
Mechanics.	Thompson's Electro-Magnet, ..	April	80	50						April	80		
Hydro-Mechanics.	Love's Hydraulics, ..												
	Beaumont's Elementary Hydrostatics, ..												
	Students will also be practised in taking discharges of Rivers, Canals and Quat'rbouries.												
* Property, ..	Calculations, ..												
Total First Year's Marks—(60 required for passing), ..			10	110	180								
Total Second Year's Marks—(76 required for passing), ..							40	100	280				
Total Third Year's Marks—(86 required for passing), ..										116		80	260

* The Project includes a Survey if necessary, and the Designs, Plans, Estimates and Report of some work in connection with Electrical or Telegraph Engineering to last four for the year

Marks.	
Applied Mechanics, ..	50
Hydraulics, ..	40
Engineering and Surveying, ..	100
Estimating, ..	90
Total, ..	280

TELEGRAPH CLASS.
NATURAL SCIENCE (880).

[illegible]

TELEGRAPH CLASS.

DRAWING (970).

[illegible]

TELEGRAPH CLASS.
SURVEYING (300).

Self-direction	Text-books and particulars	FIRST YEAR			SECOND YEAR			THIRD YEAR			Grand Total contribution
		During year	Final examination	Total	During year	Final examination	Total	During year	Final examination	Total	
		Date	Marks		Date	Marks		Date	Marks		
Use and Adjustment of Instruments, ..	Bookee Manual of Surveying	..	16								
Levels in the Field, ..	*Term Examination, ..	Jan'y	16								
Curves and Alignments, ..	..	March	25								
Meridian observations, ..	..									
Station Surveys, ..	" Final Examination, ..		45								
Levels, ..	Instruction in field and independent surveys of all kinds, ..		45								
" Traverse, ..	Included in Engineering		20								
Project, ..											
Total First Year's Marks—(50 required for passing), ..			150	150							
Total Second Year's Marks—(85 required for passing), ..			..	..			
Total Third Year's Marks—(65 required for passing), ..			..	..			
			..	..							200

* This will include a practical examination in the field and should thoroughly test the capabilities of each student.
† Not less than \$ million to be given in this day.

TELEGRAPH CLASS.

ESTIMATING (100).

[illegible]**ACCOUNTS (50).**

Accounts,	Public Works Department Code, Inghis' Book-keeping,	July	20	30
Total Third Year's Marks—(16 required for passing),	20	30

TELEGRAPH CLASS.
MATERIALS AND CONSTRUCTION (180).

TELEGRAPH CLASS.

[illegible]

TELEGRAPH CLASS.

PRACTICAL ENGINEERING (500)

COULDS OF STUDY.

[illegible]

See Note under "Method and material."

TELEGRAPH CLASS. LABORATORIES (150).

Sub-division	Text-books and particulars	FIRST YEAR			SECOND YEAR			THIRD YEAR		
		During year	Final Ex- amination	Total	During year	Final Ex- amination	Total	During year	Final Ex- amination	Total
		Date	Marks		Date	Marks		Date	Marks	
Chemical,	<i>Thompson and Mur's Qualitative Analysis,</i> <i>Thomson's Analysis of Lime and Cement Stones,</i>									
Physical,	<i>Glasse's and Shaw's Prac- tical Physics,</i> <i>Fleming's Electrical Labora- tory Notes and Formulae,</i>				May	50				
Electrical,	<i>Kenner's Handbook of Elec- trical Testing,</i>									
Mechanical,	<i>Unwin's Training of Materials of Construction,</i>							June 100		
	The marks for these Courses will be given as follows — Practical work during the course, 80 per cent. of marks Concluding Examination in May-June, 20 per cent of marks.									
	Total Second Year's Marks—(16 required for passing),		..	..		50	50			
	Total Third Year's Marks—(50 required for passing),		..	..		..	..		100	150

TELEGRAPH CLASS.
WORKSHOPS (150).

[illegible]

TELEGRAPH CLASS.
PROCESS WORK (40)

[illegible]

TELEGRAPH CLASS.

PHYSIQUE (250).

Sub-division	Detail	Total Test Marks
Gymnastics, ..	Volunteers are not required to pass in Gymnastics and are marked for drill, shooting, &c., ..	36
Athletic Sports, ..	Proficiency in Games, &c.,	75
Health, ..	Marks awarded by Medical Officer or Civil Surgeon in charge of College,	75
General Fitness,	Fitness for the Department,	75
	Total, ..	250

UPPER SUBORDINATE CLASS. ELEMENTARY MATHEMATICS (400).

Sub-division	Test-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Total	Marks for	During year		Total	Marks for
		Date	Marks			Date	Marks		
Arithmetic,	Coleman's Arithmetic, ..	February	30	60	340	December	60	400	
Algebra,	Coleman's Algebra, Part I, (to the end of Quadratic Equations),	December	30	50					
Geometry,	Cape's Geometry, (Chapters 1, 2, 3 and 6),		30	50					
Trigonometry,	Todhunter's Trigonometry for Beginners, (first 14 Chapters),	March	30	40					
Manipulation,	Todhunter's Manipulation for Beginners, ..		30	50					
	<i>NS</i> —Only half the marks for Trigonometry gained in first year are carried forward to the second year		90	270	340				
Total First Year's Marks—(120 required for passing),		..	..	..	..
Total Second Year's Marks—(180 required for passing),		..	..	..	..

MECHANICS (100)

Mechanics,	.. No XIV, Simple Applied Mechanics,	March				January		50
		20	40	40	60	20	30	
Total First Year's Marks—(30 required for passing),		60	..	..	50
Total Second Year's Marks—(33 required for passing),		30	100

**UPPER SUBORDINATE CLASS.
APPLIED MECHANICS (160)**

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Total No. of examinations	Total	During year		Final No. of examinations	Grand Total
		Date	Marks			Date	Marks		
Stability of Structures and Strength of Materials, ..	No XIV, Simple Applied Mechanics, Janieson's; Elementary Applied Mechanics, Janieson's	February	10	30		March	20	50	
Mechanisms, ..	Janieson's Elementary Applied Mechanics, Love's Hydrostatics.					May	15	25	
Hydro-Mechanics, ..	Students will also be practised in taking discharges of rivers, canals and distributaries.					July	10	30	
Projects,* ..	Calculations,								
Total First Year's Marks—(18 required for passing),		..	10	30	40				
Total Second Year's Marks—(63 required for passing),		..	..	..	..			45	160

* The Projects include a Survey, Design, Plan, Mechanism and Report of some work, as laid down for this year.

Applied Mechanics, .. 10
Drawing, .. 20
Estimating, .. 15
Surveying, .. 15

Total Marks, .. 55

NATURAL SCIENCE (50)

Physiography, ..	Thornton's Elementary Physiography, June	30	30		
Total First Year's Marks—(16 required for passing), ..		20	30	50	
Total Second Year's Marks—(16 required for passing),		..	..	..	50

UPPER SUBORDINATE CLASS.

DRAWING (300)

Sub-division	Text-books, and particulars	FIRST YEAR				SECOND YEAR			
		During year		Total Ex-amination	Total	During year		First year marks car-ried on	Final Ex-amination
		Date	Marks			Date	Marks		
Theory of Drawing, Courses to be drawn in College Elementary and General. Topographical, Isometrical, and Free-hand and Model. Mechanical, Designing, Architectural, Shadows, Perspective, Geometrical, Courses to be drawn outside College. Project Drawings.	<i>Reveries Memoirs of Drawing</i> Term Examinations, Students are expected to complete the regular detailed course for each year, working in the College, by the end of June. Any drawings remaining after this date in the First year may be finished in College during the Second year, but will only receive one-half value in marks <i>See Note to Applied Mechanics,</i>	April	10			March	20		
				65			40		
				20					
				15					
				15					
				5					
						July	20		
Total First Year's Marks—(45 required for passing),		..	..	130	190			180	
Total Second Year's Marks—(100 required for passing),								170	300

UPPER SUBORDINATE CLASS.

241

UPPER SUBORDINATE CLASS. SURVEYING (360).

Sub-Divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR				Grand Total
		During year		Marks	Final Examination	Total	During year		Final Examination	
		Date					Date			
Use and Adjustment of Instruments, Levels in the field, Ground Trading, Curves and Alignments, Surveying, Station Survey, Levels, Travels, Demonstration, Project,	Roquette's Manual of Surveying "Term Examinations," .. " " .. " " .. "Final Examinations," .. " " .. Instruction in the field and independent surveys of all classes A Survey for the Project given out for the year, .. <i>See Note under Applied Mechanics</i>	January April	15 25		40		February July	20 25 15		190
Total First Year's Marks—(33 required for passing), ..		..	160	40	190	..	..	90	..	250
Total Second Year's Marks—(38 required for passing), ..		..	..	..	..	..	..	..	..	..

This will include a practical Examination in the field, and should thoroughly test the capacities of each student.
See how many it takes to be done in the day

UPPER SUBORDINATE CLASS.
ESTIMATING (100)

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Total	First year marks out of	During year		Final fix	Grand Total
		Date	Marks			Date	Marks		
Specifications, .. Quantities, .. Rates, .. Project, ..	Roarison Manual of Estimating Students will be given several trial Examinations while studying this subject, .. A complete Estimate for the work selected as the Project for the year, See Note under Applied Mechanics					February April	15 20	50	
Total Second Year's Marks—(\$8 required for passing)...			..	..			50	50	100

ACCOUNTS (50)

Accounts, ..	<i>Public Works Department Code, ..</i>						January	20	20
	Ingle's Book-keeping, ..								
	Several trial Examinations will be given in this subject. ..								
Total Second Year's Marks—(16 required for passing),..		..	..	..	..	..		20	50

UPPER SUBORDINATE CLASS. LANGUAGES (50).

Sub-division	Term-books and portfolios	FIRST YEAR				SECOND YEAR			
		During year		Final Examination	Total	During year		Final Examination	Grand Total
		Date	Marks			Date	Marks		
English,	Tested by Examinations in writing from dictation, reading, and in composition, ..	December	30	30					
Total First Year's Marks—(16 required for passing), ..					30				
Total Second Year's Marks—(16 required for passing), ..					30				50

MATERIALS AND CONSTRUCTION (160).

Materials,	Roote's Manual of Materials, ..	January	30	35			
Earthwork,	" " Earthwork, ..	March	16	4			
Carpentry,	" " Carpentry, ..	May	20	45			
Masonry,	" " Masonry, ..	May	15				
Ironwork,	" " Materials, ..						
Students are expected also to be familiar with the specimens of materials in the Museum, and with the practical work carried on at the Case's Foundry, the brick-works and other works in progress in the station							
Total First Year's Marks—(38 required for passing), ..			80	80	180		

UPPER SUBORDINATE CLASS.

13

UPPER SUBORDINATE CLASS.
PRACTICAL ENGINEERING (270).

Sub-divisions	Text-books and partitions	FIRST YEAR				SECOND YEAR			
		During year		Plants & automation	Total	During year		Plants & automation	Grand Total
		Date	Marks			Date	Marks		
Buildings, ..	Roofing Manual of Buildings, ..					March	25	30	
Bridges, ..	" " Bridges, ..							30	
Roads, ..	" " Roads, ..					May	25	30	
Railways, ..	" " Railways, ..					June	15	30	
Hydraulic Works, ..	" " Irrigation Works, ..					July		35	
Project, ..	" The Engineering of the Project given out for this year, ..								
Notes on Works, ..	See Note under Applied Mechanism, .. Each Student will keep a Note Book and record in it descriptions and sketches of any materials, manufactures or works visited by him. Advantages will be taken of every work of repair or construction under examination in or near Roofs and of suitable examples in the Workshops by careful inspection both under the instruction of a master and independently. Full notes and sketches are to be recorded by Students in their note books, which are to contain no transcripts from their text books. All sketches should be done in pencil, and the date of each visit to a work invariably recorded at the head of the notes entering in the same. These note-books will be inspected once a month, and marks will be secured at the end of each session.		40				60		
Total First Year's Marks—(13 required for passing),			40		40			125	270
Total Second Year's Marks—(60 required for passing),									

UPPER SUBORDINATE CLASS.

WORKSHOPS (100).

Sub-division	Text-books and particulars	FIRST YEAR				SECOND YEAR				Grand Total
		During year		Final Examination	Total	During year		Final Examination	Total	
		Date	Marks			Date	Marks			
Carpenters', Forge, Boasting, Turning and Filing.	Mitchell's Forty Lessons in Carpentry Workshop Practice, Knapp's Mechanisms, Sprague's Casting and Founding... Knight's Mechanisms, Mitchell and Derry's Forty Lessons in Engineering Workshop Practice, The marks for these courses will be given as follows — Practical work during the course, 80 per cent of marks Concluding Examination in June, 20 per cent of marks	June	50		50	June	50		50	100
Total First Year's Marks—(15 required for passing), .. ..		..	50		50				50	100
Total Second Year's Marks—(33 required for passing), .. ..		..	..		..				..	..

**UPPER SUBORDINATE CLASS.
PROCESS WORK (40)**

Sub-divisions	Test-technic and particulars	FIRST YEAR				SECOND YEAR				Grand Total
		During year		Final Ex- amination	Total	During year		Final Ex- amination	Total	
		Date	Marks			Date	Marks			
Photography, .. Fantotype,	Abbey's Instruction in Photography, O'Neill's Fantasy Printing Process, Process work marks are awarded as follows — Practical work during the Course, 15 Concluding Examination in .. 6 April-December, .. 6 Total, .. 20 NB -Only a limited number of Students can be trained in Photography. The marks allotted for this subject will be excluded from the totals of Students who have not been instructed					April December	20 20			40
Total Second Year's Marks--(15 required for passing),		..	..	..	..					40

UPPER SUBORDINATE CLASS.

PHYSIQUE (150).

Sub-division	Detail	Second Year Marks
Gymnastics, ..	Volunteers are not required to pass in Gymnastics and are marked for drill, shooting, &c., ..	15
Athletic Sports, ..	Proficiency in Games, &c.,	45
Health, ..	Marks awarded by Medical Officer, or Civil Surgeon in charge of College, ..	45
General fitness, ..	Fitness for the Department,	45
	Total, ..	150

LOWER SUBORDINATE CLASS.
ELEMENTARY MATHEMATICS (320).

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Examination	Total	During year		Examination	Total
		Date	Marks			Date	Marks		
Arithmetic, ..	Colenso's Arithmetic, ..	December	30	50	..				
Algebra, ..	Haddon's Algebra, ..	February	30	40					
Geometry, ..	Wallace's Euclid, ..	May	20	40					
Trigonometry, ..	Tollhunter's Trigonometry for Beginners, ..								
Measurement, ..	Tollhunter's Mensuration for Beginners, ..	April	20	40		February	20	40	
	Exercises Mathematical Tables.								
Total First Year's Marks—(86 required for passing), ..		..	90	170	960				
Total Second Year's Marks—(106 required for passing), ..		..	..	..	..				320

MECHANICS (50).

Students	No. XIV, Simple Applied Mechanics,				Marks	
Total Second Year's Marks—(16 required for passing),	20	50

LOWER SUBORDINATE CLASS.
APPLIED MECHANICS (80).

Sub-division	Text-books and particulars	FIRST YEAR				SECOND YEAR				
		During year		Final Ex- amination	Total	During year		Final Ex- amination	Grand Total	
		Date	Marks			Date	Marks			
Stability of Structures, Strength of Materials, Hydro-Mechanics,	No XIV, Simple Applied Mechanics, Goodeve's Mechanics, .. Roetté's Manual of Hydraulics, .. Students will also be practised in taking Discharges of rivers, canals and distributaries ..						March June	15 10 20	25 25	80
Total Second Year's Marks—(25 required for passing),		..	..	..	..				25	55

NATURAL SCIENCE (80)

Physiography, ..	..	February	10	20					
Total First Year's Marks—(10 required for passing),		..	..	20	20	80			
Total Second Year's Marks—(10 required for passing),		..	..	..	..	..			80

* To be passed

LOWER SUBORDINATE CLASS.

DRAWING (350).

Sub-division	Text-book and particulars	FIRST YEAR				SECOND YEAR				Grand Total
		During year		Final Examination	Total	During year		Final Examination	Total	
		Date	Marks			Date	Marks			
Theory of Drawing, Course to be drawn in College	<i>Evolve Manual of Drawing</i> Term Examination,	March	20	..	20					
Elementary and General, ..	Students are expected to complete the regular detailed course for each year, working in the College, by the end of June. Any drawings remaining after this date may be finished in College during the second year, but will only receive one-half value in marks.		100				70			
Topographical, ..			35							
Isometrical, ..			25							
Perspectival and Model, ..			25							
Designing, ..			15							
Architectural, ..										
Shadows, ..										
Total First Year's Marks—(78 required for passing), ..			290		290				290	
Total Second Year's Marks—(116 required for passing), ..					..				180	
					..					350

55770 STATISTICAL BUREAU

1142

LOWER SUBORDINATE CLASS.

SURVEYING (380).

Sub-divisions	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Final Examination	Total	First year marks out of 100	During year		Final Ex- amination
		Date	Marks				Date	Marks	
Use and Adjustment of Instruments.	Rocklee Manual of Surveying								
Levels in the Field.	• Term Examination, ..	January	20				February	30	
Ground Tracing.	† „ „ ..	March	35				April	25	
Curves and Align- ments, ..	„ „ ..								
Surveying, ..	Final Examination, ..			55					
Station Surveys, ..				80					
• Levels, ..				80					
• Traverses, ..	Instruction in the field and indepen- dent surveys of all kinds,			80					
Demonstration, ..									
Total First Year's Marks—(80 required for passing),		..	55	205	260				
Total Second Year's Marks—(116 required for passing),		..	..	..	..	260		90	350

* This will include a practical Examination in the field and should thoroughly test the acquisition of each student.
† Not less than 3 miles to be done in the day.

LOWER SUBORDINATE CLASS.

ESTIMATING (150).

Sub-Division	Text-books and particulars	FIRST YEAR				SECOND YEAR				Grand Total
		During year		Final Re-estimated	Total	During year		Final Re-estimated		
		Date	Marks			Date	Marks			
Specifications, ..	Rootree Manual of Estimating. Students will be given several oral Examinations while studying this subject.									
Quantities, ..										
Rates, ..										
Total Second Year's Marks—(50 required for passing).				50	100	150

ACCOUNTS (50).

Accounts, ..	Public Works Department Code, ..								
	Several oral Examinations will be given in this subject.								
Total Second Year's Marks—(15 required for passing).			.. ..	.. ..			20 30 50		

LOWER SUBORDINATE CLASS. LANGUAGES (150).

Sub-division	Text-books and particulars	FIRST YEAR				SECOND YEAR			
		During year		Final examination	Total	During year		Final examination	Grand Total
		Date	Marks			Date	Marks		
English,	<i>College Text-books</i> Students will be examined in English dictation, reading and in translation from English into Urdu and from Urdu into English.	December	50	80		December	100		
Total First Year's Marks—(50 required for passing),		"	50	80	100				150
Total Second Year's Marks—(50 required for passing),		"	"	"	"		100		

MATERIALS AND CONSTRUCTION (150)

Materials.	Books Manual of Materials,	January	25	80					
Earthwork,	" " Pathwork,	March	25						
Carpentry,	" " Materials,	April	15						
Masonry,	" " "	June	30	40					
Ironwork,	" " "	June	10						
	Students are expected to be familiar with the specimens of Indian Building Materials in the College and used in station work, and with the ample details of practical work carried on at the Canal Faudra the brick-roads and works in progress in the Station								
Total First Year's Marks—(50 required for passing),		"	90	60	150				150
Total Second Year's Marks—(50 required for passing),		"	"	"	"				

LOWER SUBORDINATE CLASS. PRACTICAL ENGINEERING (100).

Sub-Division	Text-books and particulars	FIRST YEAR				SECOND YEAR				Grand Total
		During year		Practical Examination	Total	During year		Practical Examination	Total	
		Date	Marks			Date	Marks			
Buildings,	..			..		
Bridges,	..			..		
Roads,	..			..		
Hydraulic Works,	<i>Selections from the Irrigation Works,</i> ..			..			
	Students will be taught the special points of importance to Lower Subordinates in the Engineering of the branches of work noted above									
Total Second Year's Marks—(80 required for passing)		..	..	..	..					100

LOWER SUBORDINATE CLASS.

100

LOWER SUBORDINATE CLASS. **WORKSHOPS (100)**

Sub-Divisions	Textbooks and particulars	First Year				Second Year			
		During year		Final Examination	Total	During year		Final Examination	Grand Total
		Date	Marks			Date	Marks		
Carpenter's	Mitchell's Forty Lessons in Carpentry,	May	50						
Forge,	Knight's Mechanism,								
Turning and Filing,	"								
	Mitchell and Davy's Forty Lessons in Engineering Workshop Practice,								
Boatbuilding,	Sprague's Casting and Foundry, ..								
	The marks for these courses will be given as follows —								
	Practical work during the Course, 80 per cent. of marks.								
	Concluding Examination in May, 20 per cent. of marks.								
Total First Year's Marks—(18 required for passing),		..	50	..	50				
Total Second Year's Marks—(32 required for passing),		..	..	..	..
									100

COURSE OF STUDY,

1891

LOWER SUBORDINATE CLASS.
PROCESS WORK (20).

Sub-Division	Tasks and particulars	FIRST YEAR				SECOND YEAR				Grand Total
		During year		Printed Examination	Total	During year		Printed Examination	Total	
		Date	Marks			Date	Marks			
Typewriting	O'Neill's Typewriting Printing Process, Marks will be given as follows — Practical work during the course, 15 Concluding Examination, 5 Total .. 20					January	20		20	
Total Second Year's Marks—(6 required for passing), ..										20

PHYSIQUE (120).

Sub-Divisions.	Detail.	Second Year Marks	
Athletic Sports, ..	Proficiency in Games, &c.	..	20
Health, ..	Marks awarded by Medical Officer or Civil Surgeon in charge of College, ..	..	20
General Fitness, ..	Fitness for the Department, ..	..	20
	Total,	..	120

DEATHMAN AND COMPUTER CLASS.

ELEMENTARY MATHEMATICS (820).

[illegible]

DRAFTSMAN AND COMPUTER CLASS:

REGISTRATION (50)

Sub-divisions	Text-books and particulars	First Year			Second Year			Third Year		
		During year	Final Examination	Total	During year	Final Examination	Total	During year	Final Examination	Total
		Books	Marks		Books	Marks		Books	Marks	
Stanzas.	.. No XIV, Simple Applied Mechanics,									
Total Second Year's Marks—(16 required for passing),	..			..		29	80	50		50
Total Third Year's Marks—(16 required for passing),	..			..		..	..	..		50

APPLIED MECHANICS (80).

Ability of Structures, ..	No. XIV, Simple Applied Mechanics, ..	May	10	20			
Strength of Materials, ..	Gooden's Mechanics, ..						
Mechanism, ..	" " ..	June	10				20
Total Second Year's Marks—(18 required for passing), ..				20	20	40	
Total Third Year's Marks—(20 required for passing), ..						40	20
							60

DRAFTSMAN AND COMPUTER CLASS. **SURVEYING (350).**

Sub-division	Text-books and particulars	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year		Total	Final Examination	During year		Total	Final Examination	During year		Total	Final Examination
		Date	Marks			Date	Marks			Date	Marks		
Use and Adjustment of Instruments, ..	Book: Manual of Surveying												
Levels in the field, ..	"	Jan.	20										
Ground Tracing, ..	"	March	35			Feb.	30						
Curves and Alignments, ..	"	"	"			April	25						
Surveying, ..	"	"	"										
Station Surveying, ..	"	"	"										
" Levels, ..	"	"	"										
" Traverse, ..	"	"	"										
Densitation, ..	"	"	"										
Total First Year's Marks—(85 required for passing), ..			55	55									
Total Second Year's Marks—(110 required for passing), ..			80	80									
Total Third Year's Marks—(110 required for passing), ..			80	80									
Total Marks—(260 required for passing), ..			215	215									

* This will include a practical examination in the field, and should thoroughly test the experience of each student.

† This has been done in the day

DRAFTSMAN AND COMPUTER CLASS. **ESTIMATING (200)**

Sub-Divisions	Text-books and particulars	FIRST YEAR			SECOND YEAR			THIRD YEAR			Grand Total
		During year	Final Ex- amination	Total	During year	Final Ex- amination	Total	During year	Final Ex- amination	Total	
Specification, Quantities, Notes,	Book-kee Manual of Estimating The Examinations in this sub- ject will be searching.	Date	Marks		Date	Marks		Date	Marks		
					Dec	10	80	Jan'y	20		
					March	15		Feb	28		
					April	25		April	30		
					June	25		May	45		
Total Second Year's Marks—(80 required for passing),			..	..	70	80	150				
Total Third Year's Marks—(80 required for passing),			..	..	..	..	..	75	125		200

ACCOUNTS (50)

Accounts,	Public Works Department Code,	Jan'y	50	80							
Total Second Year's Marks—(18 required for passing),			20	30	80						
Total Third Year's Marks—(18 required for passing),			..	..	..	50					50

LANGUAGES (150)

English,	College Test-books, Students will be examined in English dictation and reading and in translations from Eng- lish into Urdu and from Urdu into English	Dec	50	80							
					Dec	100					
Total First Year's Marks—(80 required for passing),			50	100							
Total Second Year's Marks—(80 required for passing),			..	..	100	120					
Total Third Year's Marks—(80 required for passing),			..	..	..	..	100	100	50		150

DRAFTSMAN AND COMPUTER CLASS

[illegible]

DRAFTSMAN AND COMPUTER CLAS.

PROJECTS WORK (40)

[illegible]

DRAFTSMAN AND COMPUTER CLASS. PHYSIQUE (120).

Sub-divisions	Detail	Total Year Merit
Athletic Sports, ..	Proficiency in Games, &c., ..	20
Health, ..	Marks awarded by Medical Officer or Civil Surgeon in charge of College, ..	40
General Fitness,	Fitness for the Department, ..	50
	Total,	120

MECHANICAL APPRENTICE CLASS. ELEMENTARY MATHEMATICS (320)

Sub-division	Text-books and particulars	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During Year		Final %	Total	During Year		Final %	Total	During Year		Final %	Total
		Date	Marks			Date	Marks			Date	Marks		
Arithmetic	Colenso's Arithmetic,	Feb.	30	50									
Algebra	Haddon's Algebra,	March	20	40									
Geometry	Wallace's Euclid,	March	20	40									
Trigonometry	Todhunter's Trigonometry for	June	10	20		March	10	20					
Measurement	Beginners, Measurement for	June	20	40									
	Beginners,												
	Booke's Mathematical Tables												
Total First Year's Marks—(96 required for passing), ...			100	190	290								
Total Second Year's Marks—(106 required for passing), ...			...					10	20				
Total Third Year's Marks—(108 required for passing), ...			...					...					320

MECHANICS (100).

Mechanics,	Jamieson's Elementary Applied Mechanics,	April	20	80		April	25	80					
Total First Year's Marks—(16 required for passing), ...			20	80	80								
Total Second Year's Marks—(33 required for passing), ...			...			25	25	50	100				
Total Third Year's Marks—(33 required for passing), ...			...			...				100			100

MECHANICAL APPRENTICE CLASS.

APPLIED MECHANICS (150)

Sub-divisions	Text-books and particulars	FIRST YEAR			SECOND YEAR			THIRD YEAR			Grand Total		
		During year		Final Ex- amination	Total	During year		Final Ex- amination	Total	During year		Final Ex- amination	
		Date	Marks			Date	Marks			Date			Marks
Strength of Ma- terials, Mechanics, Hydro-Mechanics,	Jamieson's Elementary Ap- plied Mechanics, ..												
Total Second Year's Marks—(36 required for passing),			..	..							
Total Third Year's Marks—(50 required for passing),			..	..							
												180	

NATURAL SCIENCE (100).

Electricity and Magnetism, ..	Gordon's School Electricity, ..									May	15	20		
Heat, ..	Warren's Heat and the Steam Engine, ..									May	25	40		
Total Third Year's Marks—(38 required for passing),												40	80	100

MECHANICAL APPRENTICE CLASS. DRAWING (350).

Sub-division	Tests and particulars	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year		Final examination		During year		Final examination		During year		Final examination	
		Date	Marks	Total marks	Total marks	Date	Marks	Total marks	Total marks	Date	Marks	Total marks	Total marks
Theory of Drawing.	<i>Revises Manual of Drawing.</i>												
..	Term Examinations, ..	March	10										
..	" ..	May	20										
Courses to be drawn in College.	Students are expected to complete the regular detailed course for each year working in the College by the end of June. Any drawings remaining after this date in the first or second year may be finished in the following years, but will only receive one-half value in marks.												
Elementary and General, ..			80										
Isometrical, ..			35										
Free-hand and Model, ..			35										
Mechanical, ..							85						
Draping, ..							50						
Shadows, ..							15						
Geometrical, ..							80						
Total First Year's Marks—(43 required for passing), ..			180		180								
Total Second Year's Marks—(80 required for passing), ..			..	..	..		160		160				
Total Third Year's Marks—(116 required for passing), ..			..	..	..		..	..	..			190	350

ESTIMATING (80).

Specification, ..	Revises Manual of Estimating	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year		Final examination		During year		Final examination		During year		Final examination	
		Date	Marks	Total marks	Total marks	Date	Marks	Total marks	Total marks	Date	Marks	Total marks	Total marks
Students will be given several trials Examinations while studying this subject.													
Total Second Year's Marks—(56 required for passing),								
Total Third Year's Marks—(36 required for passing),			80	80

MECHANICAL APPRENTICE CLASS.

ACCOUNTS (30).

Sub-Division	Text-books and particulars	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year		Final Ex- amination	Total	During year		Final Ex- amination	Total	During year		Final Ex- amination	Total
		Date	Marks			Date	Marks			Date	Marks		
Accounts,	<i>Public Works Department Code.</i> Several trial Examinations will be given in this subject									April	10	20	
Total Third Year's Marks—(10 required for passing),													
					..		..		..		10	20	30

LANGUAGES (80).

English,	<i>College Year-Joseph.</i> Students will be examined in English dictation and reading, and in translations from Eng- lish into Urdu and from Urdu into English	January	30	80									
Total First Year's Marks—(26 required for passing),													
			..	..	..		30		80				
Total Second Year's Marks—(26 required for passing),													
			..	..	..		..		80				
Total Third Year's Marks—(36 required for passing),													
			..	..	..		..		80				80

MECHANICAL APPRENTICE CLASS. MATERIALS AND CONSTRUCTION (180).

Sub-division	Text-books and publications	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During year		Total		During year		Total		During year		Total	
		Date	Marks	Final Ex-amination	Marks set on	Date	Marks	Final Ex-amination	Marks set on	Date	Marks	Final Ex-amination	Grand Total
Materials, Carpentry, Ironwork,	.. Routree Manual of Materials.. .. " Iron and Steel Men- .. " factures. Students are expected to be familiar with all classes of mate- rials used in the Canal Foundry, and with the practical details of the work carried out there					Jan- Feb March	15 10 30	25 10 30				20 30	80
Total Second Year's Marks—(28 required for passing),			..	..			55	25	80			80	160
Total Third Year's Marks—(33 required for passing),			..	..			..	..	..			..	..

LABORATORIES (30).

Mechanical,	<i>Unwin's Testing of Materials of structures.</i> The marks for this course will be given as follows — Practised work during the course, .. 20 Concluding Examination in June, .. 10 Total, .. 30												
Total Third Year's Marks—(10 required for passing),			..	..			..	..	..			30	30

MECHANICAL APPRENTICE CLASS. WORKSHOPS (1440).

Notes below	Test books and questions	FIRST YEAR				SECOND YEAR				THIRD YEAR			
		During Year	Marks	Final Ex- amination	Total	During year	Date	Marks	Final Ex- amination	Total	During year	Date	Marks
Practical Exam- inations, ..	These Examinations will be held by the Superintendent, Canal Foundry, Hoorties, ..	Feb April May	180 180 180			March May		180 180			January March April		180 180 180
Carpenter's, Forge, Turning and Fitting, Foundry, ..	Wilson's <i>Carpentry and Joinery</i> , <i>Knapp's Mechanism</i> , <i>Sprague's Casting and Found- ing</i> , ..										June		180
	A course of practical instruction in the Canal Foundry, Hoorties, under the Superintendent N.B.—Half the full total of marks required at end of first year to obtain a certificate				480					800			
Total First Year's Marks—(180 required for passing),			480					800					
Total Second Year's Marks—(285 required for passing),			..	..	..			..	..	..
Total Third Year's Marks—(285 required for passing),			..	..	..			..	..	..
													1440

MECHANICAL APPRENTICE CLASS.

1440

METCHANICAL APPRENTICE CLASS.

PROCESSES (40)

Sub-divisions	Text-books and portions	FIRST YEAR						SECOND YEAR						THIRD YEAR					
		During year			Final Examination	Total	During year			Final Examination	Total	During year			Final Examination	Total			
		Date	Marks	Prize Money			Date	Marks	Prize Money			Date	Marks	Prize Money					
Eurotype,	O'Neill's Eurotype Printing Process,																		
Photography,	Barton's Modern Photography, Process work marks will be awarded as follows — Practical work during the course, .. 15 Condensing Examination in February-June, .. 5 Total, .. 20																		
<i>NR</i> —Only a limited number of Students can be trained in Photography The marks allotted for this subject will be excluded from the totals of Students who have not been instructed.																			
Total Second Year's Marks—(8 required for passing),		.. .. .						.. .. .						.. .. .
Total Third Year's Marks—(13 required for passing),		.. .. .						.. .. .						.. .. .

MECHANICAL APPRENTICE CLASS.

PHYSIQUE (120)

Sub-Divisions.	Details.			Third Year Marks.
Athletic Sports,	Proficiency in Games, &c.,	..	..	..
Health,	Marks awarded by Medical Officer or Civil Surgeon in charge of College,	..	..	..
Fitness,	Fitness for the Department,	..	..	..
			Total,	120

TEXT-BOOKS FOR

Head.	Sub-head.	Engineer Class.	Telegraph Class.
Elementary Mathematics.	Arithmetic, ..	Colenso's Arithmetic.	.. ..
	Algebra, ..	Todhunter's Algebra for Colleges	.. ..
	Geometry, ..	Todhunter's Elements of Euclid	.. ..
	Trigonometry, .	Todhunter's Plane Trigonometry	.. ..
	Mensuration, ..	Todhunter's Mensuration for Beginners Chambers's Mathematical Tables	.. .. Chambers's Mathematical Tables.
Higher Mathematics.	Co-ordinate Geometry.	Todhunter's Conic Sections	.. ..
	Conic Sections, ..	Drew's Geometrical Conic Sections	.. ..
	Differential Calculus.	Todhunter's Differential Calculus	Todhunter's Differential Calculus
	Integral Calculus, .	Todhunter's Integral Calculus.	Todhunter's Integral Calculus
Mechanics.	Mechanics, ..	Hicks' Elementary Dynamics	.. ..
Applied Mechanics.	Stability of Structures, Strength of Materials.	Roorkes Applied Mechanics, T. C.	Roorkes Applied Mechanics, T. C.
	Mechanism, .	Goodve's Elements of Mechanism	Thompson's Electro-Magnet.
	Hydro-Mechanics {	Love's Hydraulics Baker's Elementary Hydrostatics	.. ..
Natural Science.	Phymography, ..	.. ..	.. ..
	Geology, .	Geikie's Class Book of Geology	.. ..
	Mineralogy, ..	Baermann's Descriptive Mineralogy	.. ..
	Chemistry, ..	Roscoe's Lessons in Elementary Chemistry	.. ..
	Electricity and Magnetism, ..	Polaris's Notes on Testing Lightning Conductors	Ayrton's Practical Electricity.
	Heat, Sound and Light, ..	Gano's Physics.	.. ..

Note.—Works printed in Italics are Text-books

THREE YEARS' COURSE

Upper Subordinates.	Lower Subordinates.	Draftsmen and Computers	Mechanical Subordinates.
Colenso's Arithmetic. Colenso's Algebra, Part I Cape's Geometry, T C.	Colenso's Arithmetic Haddon's Algebra. Wallace's Euclid.	.. .. .. .. .. ..	Colenso's Arithmetic. Haddon's Algebra. Wallace's Euclid.
Todhunter's Trigonometry for Beginners. Todhunter's Mensuration for Beginners. Roorkee Mathematical Tables, T C	Todhunter's Trigonometry for Beginners. Todhunter's Mensuration for Beginners. Roorkee Mathematical Tables, T C	Todhunter's Trigonometry for Beginners Roorkee Mathematical Tables, T C.	Todhunter's Trigonometry for Beginners. Todhunter's Mensuration for Beginners. Roorkee Mathematical Tables, T C
..
..
..
..
No XIV Simple Applied Mechanics, T C	No XIV Simple Applied Mechanics, T C	No XIV Simple Applied Mechanics, T C	Jameson's Elementary Applied Mechanics.
No XIV Simple Applied Mechanics, T C Jameson's Elementary Applied Mechanics Jameson's Elementary Applied Mechanics.	No XIV Simple Applied Mechanics, T C Goodeve's Mechanics.	No XIV Simple Applied Mechanics, T C Goodeve's Mechanics. Goodeve's Mechanics.	.. .. Jameson's Elementary Applied Mechanics. Jameson's Elementary Applied Mechanics. Jameson's Elementary Applied Mechanics.
Love's Hydraulics.	* Roorkee Manual of Hydraulics, T C	.. ..
Thornton's Elementary Physiography	Gekie's Physical Geography	.. ..	.. ..
..
..
..
.. ..	.. ..	.. ..	Gordon's School Electricity Warren's Boat and the Steam Engine.

and need not be purchased by students.

* To be issued.

TEXT-BOOKS FOR

Head.	Sub-head	Engineer Classes.	Telegraph Classes.
Drawing, ..	Drawing, .	Roorkee Manual of Drawing, T C	Roorkee Manual of Drawing, T C
Surveying, ..	Surveying, .	Roorkee Manual of Surveying, T C.	Roorkee Manual of Surveying, T C
Estimating, ..	Estimating, .	Roorkee Manual of Estimating, T C	Roorkee Manual of Estimating, T C.
Accounts,	Accounts, {	<i>Public Works Department Code</i> Ingis' Book-keeping	<i>Public Works Department Code</i> Ingis' Book-keeping.
Languages, ..	English,	.. ..	..
Materials and Construction,	Materials, ..	Roorkee Manual of Materials, T C	.. ..
	Earthwork, .	Roorkee Manual of Earthwork, T C	.. ..
	Carpentry, ..	Roorkee Manual of Carpentry, T C	.. ..
	Masonry, ..	Roorkee Manual of Masonry, T C	.. ..
	Ironwork, .	Hoorna' Iron and Steel Manufacture	.. ..
Practical Engineering,	Buildings, .	Roorkee Manual of Buildings, T C	Roorkee Manual of Buildings, T. C.
	Bridges, ..	Roorkee Manual of Bridges, T C	.. ..
	Roads, ..	Roorkee Manual of Roads, T C	.. ..
	Railways, .	Roorkee Manual of Railways, T C	.. ..
	Tunnels and Mining,	<i>Crosswell's Mine Engineering.</i>	.. ..
	Hydraulic Works, {	Roorkee Manual of Irrigation Works	.. ..
	Sanitary Engineering,	<i>Bundall's Lectures, S. M. R.</i>	.. ..
	Water Supply, ..	<i>Halden's Lectures, S. M. R.</i> <i>Menoroff's Water Supply of Barracks and Campments</i>	.. ..
	Electrical Engineering,	Shingo and Brooker's Electrical Engineering Manro and Jameson's Pocket Book.	Shingo and Brooker's Electrical Engineering Manro and Jameson's Pocket Book.

Note.—Works printed in italics are Text-books

THREE YEARS' COURSE—(continued).

Upper Subordinates.	Lower Subordinates.	Draftsmen and Computers.	Mechanical Subordinates.
<i>Roorkee Manual of Drawing, T C</i>	<i>Roorkee Manual of Drawing, T C</i>	<i>Roorkee Manual of Drawing, T C</i>	<i>Roorkee Manual of Drawing, T C.</i>
<i>Roorkee Manual of Surveying, T C</i>	<i>Roorkee Manual of Surveying, T C</i>	<i>Roorkee Manual of Surveying, T C.</i>	" "
<i>Roorkee Manual of Estimating, T C</i>	<i>Roorkee Manual of Estimating, T C</i>	<i>Roorkee Manual of Estimating, T C</i>	<i>Roorkee Manual of Estimating T C.</i>
<i>Public Works Department Code</i>	<i>Public Works Department Code</i>	<i>Public Works Department Code</i>	<i>Public Works Department Code</i>
<i>Ingis' Book keeping</i>	" "	" "	" "
<i>College Text-books</i>	<i>College Text-books.</i>	<i>College Text-books</i>	<i>College Text-books.</i>
<i>Roorkee Manual of Materials, T C</i>	<i>Roorkee Manual of Materials, T C</i>	" "	<i>Roorkee Manual of Materials, T C.</i>
<i>Roorkee Manual of Earthwork, T C.</i>	<i>Roorkee Manual of Earthwork, T C</i>	" "	" "
<i>Roorkee Manual of Carpentry, T C</i>	<i>Roorkee Manual of Materials, T C</i>	<i>Roorkee Manual of Carpentry, T C</i>	<i>Roorkee Manual of Carpentry, T C.</i>
<i>Roorkee Manual of Masonry, T C</i>	<i>Roorkee Manual of Materials, T C</i>	<i>Roorkee Manual of Masonry, T C</i>	" "
<i>Roorkee Manual of Materials, T C</i>	<i>Roorkee Manual of Materials, T C</i>	<i>Roorkee Manual of Materials, T C</i>	<i>Horns' Iron and Steel Manufacture</i>
<i>Roorkee Manual of Buildings, T C</i>	<i>Roorkee Manual of Buildings, T C</i>	<i>Roorkee Manual of Buildings T C</i>	" "
<i>Roorkee Manual of Bridges, T C</i>	<i>Roorkee Manual of Masonry, T C</i>	<i>Roorkee Manual of Bridges, T C</i>	" "
<i>Roorkee Manual of Roads, T C</i>	<i>Roorkee Manual of Roads, T C</i>	" "	" "
<i>Roorkee Manual of Railways, T C</i>	" "	" "	" "
" "	" "	" "	" "
<i>Roorkee Manual of Irrigation Works, T C</i>	<i>Roorkee Manual of Irrigation Works, T C</i>	" "	" "
" "	" "	" "	" "
" "	" "	" "	" "
" "	" "	" "	" "

and need not be purchased by students.

TEXT-BOOKS FOR

Head.	Sub-head.	Engineer Classes.	Telegraph Classes.
Practical Engineering (cont'd)	Telegraph Engineering.	.. ..	Proce and Savenright's Telegraphy Proce and Miler's Telephones <i>William's Manual of Telegraphy</i> <i>Testing Instructions, Vol. I</i> <i>Telegraph Construction Code with Diagrams.</i>
Laboratories,	Mechanical, Chemical, Physical, Electrical,	<i>Unwin's Testing of Materials of Construction</i> <i>Thorpe and Muir's Qualitative Analysis</i> <i>Thomson's Analysis of Lime and Cement Stones</i> <i>Glassbrook and Shaw's Practical Physics</i> <i>Fleming's Electrical Laboratory Notes & Forms</i>	<i>Unwin's Testing of Materials of Construction</i> <i>Thorpe and Muir's Qualitative Analysis</i> <i>Thomson's Analysis of Lime and Cement Stones</i> <i>Glassbrook and Shaw's Practical Physics</i> <i>Fleming's Electrical Laboratory Notes & Forms</i> <i>Kemp's Hand-book of Electrical Testing</i>
Workshops,	Carpenter's, Forge, Foundry, Turning and Fitting,	<i>Mitchell's Forty Lessons in Carpentry Workshop Practice</i> <i>Knight's Mechanician</i> <i>Sproston's Casting and Founding</i> <i>Knight's Mechanician</i> <i>Mitchell and Davey's Forty Lessons in Engineering Workshop Practice</i>	<i>Mitchell's Forty Lessons in Carpentry Workshop Practice</i> <i>Knight's Mechanician</i> <i>Sproston's Casting and Founding</i> <i>Knight's Mechanician</i> <i>Mitchell and Davey's Forty Lessons in Engineering Workshop Practice</i>
Process Work,	Photography, Ferrotypes,	<i>Abney's Instruction in Photography</i> <i>Ferrotypes Printing Process, T C</i>	<i>Abney's Instruction in Photography</i> <i>Ferrotypes Printing Process, T C</i>

note.—Works printed in italics are Text-books

THREE YEARS' COURSE—(concluded)

Upper Subordinates.	Lower Subordinates.	Draftsman and Computers.	Mechanical Subordinates.
..
.. ..	.. ..	.. ..	Union's Testing of Materials of Con- struction.
..
..
Mitchell's Forty Les- sons in Carpentry Workshop Practice. Knight's Mechanician Spratton's Casting and Founding Knight's Mechanician Mitchell and Davey's Forty Lessons in En- gineering Workshop Practice.	Mitchell's Forty Les- sons in Carpentry Workshop Practice. Knight's Mechanician Spratton's Casting and Founding Knight's Mechanician Mitchell and Davey's Forty Lessons in En- gineering Workshop Practice	.. .. .. .. .. .. .. .. .. ..	Wilson's Carpentry and Joinery Knight's Mechanician Spratton's Casting and Founding Knight's Mechanician.
Abney's Instruction in Photography Ferrottype Printing Process, T C	.. .. Ferrottype Printing Process, T C	Hurton's Modern Pho- tography Ferrottype Printing Process, T C	Hurton's Modern Pho- tography Ferrottype Printing Process, T C

and need not be purchased by students.

SCALE OF MARKS.

	Engineer Class	Telegraph Class.	Upper Subordinates.	Lower Subordinates.	Draftsman and Computer	Mechanical Subordinates.
Elementary Mathematics.	400	400	400	350	330	330
Higher Mathematics.	160	160	..	..	..	..
Mechanics.	260	260	100	80	60	100
Applied Mechanics.	310	260	100	80	60	150
Natural Science.	300	330	60	30	..	100
Drawing.	400	370	300	350	680	360
Surveying.	400	200	250	350	350	..
Estimating.	100	100	100	160	300	80
Accounts.	50	50	50	80	50	80
Languages.	..	..	50	150	150	80
Materials and Construction.	180	180	180	150	150	180
Practical Engineering.	600	500	270	100	80	..
Laboratory.	100	180	..	..	..	80
Workshops.	160	160	100	100	..	1,460
Process Work.	40	40	40	20	40	40
Physique.	250	260	160	180	180	180
Total.	2,700	3,400	2,180	2,080	2,170	2,000

TABLE SHOWING THE PERIODS (HALF DAY) FOR WORK IN COLLEGE ON EACH SUBJECT

Field.	Sub-head	Engineer Class.			Telegraph Class.			Upper Sub-ordinate Class.			Junior Sub-ordinate Class.			Draftsman and Computer			Mechanical Subordinate		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Elementary Mathematics.	Arithmetic, ..	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	10	..	..
	Algebra, ..	..	..	..	..	..	..	20	..	..	15	..	..	..	..	..	15	..	..
	Geometry, ..	..	..	..	..	..	..	10	..	..	10	..	..	..	..	..	10	..	..
	Trigonometry, ..	..	..	..	..	..	..	20	..	..	10	..	..	20	..	..	17	10	..
Higher Mathematics.	Mensuration, ..	..	..	..	..	..	..	10	..	..	15	..	..	..	..	..	15	..	..
	Co-ordinate Geometry & Conic Sections, ..	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Differential Calculus, ..	..	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Integral Calculus, ..	..	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Applied Mechanics.	Mechanics, Parts I and II, ..	30	..	..	..	..	..	20	10	..	..	..	..	18	18	..	28	10	..
	Stability of Structures, ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Strength of Materials, ..	38	20	..	..	..	..	..	..	..	..	..	..	20	11	..	..	10	..
	Mechanism, ..	15	10	10	10	10	10	12	6	..	6	..	..	11	..	..	10	11	..
Natural Sciences.	Hydro-Mechanics, ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Physiology, ..	..	20	..	..	..	..	10	..	..	10	..	..	..	..	..	..	..	..
	Geology, ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Mineralogy, ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Drawing.	Chemistry, ..	64	..	30	30	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Electricity and Magnetism, ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Heat, Sound and Light, ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Elementary and General, ..	48	34	..	..	..	..	64	40	80	50	..	..	75	30	..	45	..	..
Drawing.	Topographical, ..	10	..	..	..	..	..	20	..	..	20	..	..	10	..	..	..	..	..
	Isometrical, ..	7	..	..	..	..	..	15	..	..	15	..	..	..	..	..	20	..	..
	Free-hand and Model, ..	15	..	..	..	..	..	15	..	..	10	..	..	90	..	..	90	..	..
	Mechanical, ..	..	14	..	..	..	..	17	50	..	14	..	..	15	90	..	50	..	..
Drawing.	Designing, ..	..	18	27	..	..	..	24	..	..	..	..	..	15	80	120	..	..	..

HALF DAY PERIODS ON EACH SUBJECT.

collar

[illegible]

At 2-5 years periods are only experiments not used

HALF DAY PERIODS PER WEEK FOR STUDY IN COLLEGE.

21

HALF DAY PERIODS PER WEEK.

Class	Subject	November	December	January	February	March	April	May	June	July	Total	Remarks
Engineer Class, 1st Year	Higher Mathematics,	14	14	14	14	14	14	14	14	14	12	
	Mechanics, "	14	14	14	14	14	14	14	14	14	86	
	Applied Mechanics,	14	14	14	14	14	14	14	14	14	51	
	Natural Science, "	14	14	14	14	14	14	14	14	14	64	
	Drawing,	14	14	14	14	14	14	14	14	14	88	
	Surveying,	14	14	14	14	14	14	14	14	14	88	
	Materials and Construction,	14	14	14	14	14	14	14	14	14	40	
Engineer Class, 2nd Year	Shops, "	14	14	14	14	14	14	14	14	14	31	
	Total,	12	12	12	12	12	12	12	12	12	369	
	Higher Mathematics,	14	14	14	14	14	14	14	14	14	16	Study with Tel. Class 2nd year.
	Applied Mechanics,	14	14	14	14	14	14	14	14	14	40	" " " " " " " "
	Natural Science, "	14	14	14	14	14	14	14	14	14	20	" " " " " " " "
	Drawing,	14	14	14	14	14	14	14	14	14	70	" " " " " " " "
	Surveying,	14	14	14	14	14	14	14	14	14	86	" " " " " " " "
Engineer Class, 3rd Year	Estimating,	14	14	14	14	14	14	14	14	14	15	Study Buildings with Tel. Class 2nd year.
	Practical Engineering,	14	14	14	14	14	14	14	14	14	85	" " " " " " " "
	Laboratories,	14	14	14	14	14	14	14	14	14	33	Study with Tel. Class 2nd year.
	Shops, "	14	14	14	14	14	14	14	14	14	82	" " " " " " " "
	Photography,	14	14	14	14	14	14	14	14	14	8	" " " " " " " "
	Total,	12	12	12	12	12	12	12	12	12	370	

N.B.—Subscript figures show approximate number of periods each month.

Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374

Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	370
" " 2nd "	11	11
" " 2nd "	31	31
" " 2nd "	85	85
" " 2nd "	11	11
" " 2nd "	85	85
" " 2nd "	90	90
" " 2nd "	41	41
" " 2nd "	80	80
" " 2nd "	4	4
" " 2nd "	374	374
Study with Tol. Class 2nd year.	11	374
" " 2nd "	29	16
" " 2nd "	48	89
" " 2nd "	11	38
" " 2nd "	76	46
" " 2nd "	182	16
" " 2nd "	28	17
" " 2nd "	28	115
" " 2nd "	28	85
" " 2nd "	4	82
" " 2nd "	4	8
" " 2nd "	374	

HALF DAY PERIODS PER WEEK FOR STUDY IN COLLEGE—(continued).

Class.	Subject.	November	December	January	February	March	April	May	June	July.	Total	Remarks.
1st Year.	Elementary Mathematics,	2	2	2	2	2	2	2	2		68	
	Mechanics,	1	1	1	1	1	1	1	1		20	
	Applied Mechanics,	1	1	1	1	1	1	1	1		12	
	Psychography,										9	
	Drawing,	4	4	4	4	4	4	4	4		114	
	Surveying,	2	2	2	2	2	2	2	2		73	
	English	1	1	1	1	1	1	1	1		6	
	Materials and Construction,	1	1	1	1	1	1	1	1		42	
	Workshops,	1	1	1	1	1	1	1	1		38	
	Total,	12	12	12	12	12	12	12	12		370	
2nd Year.	Mechanics,	1	1	1	1	1	1	1	1		11	
	Applied Mechanics,	2	2	2	2	2	2	2	2		21	
	Drawing,	2	2	2	2	2	2	2	2		112	
	Surveying,	1	1	1	1	1	1	1	1		34	
	Estimating,	1	1	1	1	1	1	1	1		18	
	Accounts,	1	1	1	1	1	1	1	1		16	
	Practical Engineering,	2	2	2	2	2	2	2	2		79	
	Project,	1	1	1	1	1	1	1	1		30	
	Workshops,	1	1	1	1	1	1	1	1		38	
	Process Work,	1	1	1	1	1	1	1	1		16	
	Total,	12	12	12	12	12	12	12	12		370	
Preparation and Final Examination												

12 B.—Subscript figures show approximate number of periods each month.

HALF DAY PERIODS PER WEEK.

111

Lower Subordinate Class.														Draughtsmen,																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
1st Year.							2nd Year.							3rd Year.							4th Year.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Elementary Mathematics,	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2 ₁	2

Study with L. S. 2nd year.

Study with L. S. 2nd Year.

N.B.—The bracket figures show approximate number of periods each month.

HALF DAY PERIODS PER WEEK FOR STUDY IN COLLEGE—(continued).

Class.	Subject.	November	December	January	February	March	April	May	June	July	Total	Remarks.
Draftsman, 2nd Year.	Drawing, ..	9 ³⁰	9 ³⁰	9 ³⁰	9 ³⁰	9 ³⁰	9 ³⁰	9 ³⁰	9 ³⁰		570	
	Estimating, ..	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵		83	
	Materials and Construction, ..	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵		81	
	Practical Engineering, ..	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵		81	
	Photography, ..	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵		13	
	Total, ..	13	13	13	13	13	13	13	13		873	
Mechanical Apprentices Class, 1st Year.	Elementary Mathematics, ..	2 ³⁰	2 ³⁰	2 ³⁰	2 ³⁰	2 ³⁰	2 ³⁰	2 ³⁰	2 ³⁰		66	
	Mechanics, ..	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵		28	
	Drawing, ..	3 ¹⁵	3 ¹⁵	3 ¹⁵	3 ¹⁵	3 ¹⁵	3 ¹⁵	3 ¹⁵	3 ¹⁵		96	
	English, ..	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵		4	
	Shop, ..	6 ³⁰	6 ³⁰	6 ³⁰	6 ³⁰	6 ³⁰	6 ³⁰	6 ³⁰	6 ³⁰		189	
	Total, ..	13	13	13	13	13	13	13	13		382	
Mechanical Apprentices Class, 2nd Year.	Elementary Mathematics, ..	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵		10	
	Mechanics, ..	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵		11	
	Applied Mechanics, ..	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵		22	
	Drawing, ..	3 ¹⁵	3 ¹⁵	3 ¹⁵	3 ¹⁵	3 ¹⁵	3 ¹⁵	3 ¹⁵	3 ¹⁵		96	
	Estimating, ..	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵		16	
	Materials and Construction, ..	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵	1 ¹⁵		17	
	Photography, ..	6 ³⁰	6 ³⁰	6 ³⁰	6 ³⁰	6 ³⁰	6 ³⁰	6 ³⁰	6 ³⁰		180	Study with Draftsman, 2nd Year -
	Total, ..	13	13	13	13	13	13	13	13		373	

N.B.—Subscript figures show approximate number of periods each month.

Mechanics, Apprentice Class, 3rd Year.	Applied Mechanics,										Total	11
	3 rd	1 st	1 st	1 st	1 st	1 st	1 st	1 st		
Mechanics,	8 th	8 th	8 th	8 th	8 th	8 th	8 th	8 th	..	30
Drawing,	9
Accounting,	8
Laboratory,	160
Shop,	8 th	8 th	8 th	8 th	8 th	8 th	8 th	8 th	..	4
Electrical,	67
Mathematics,	376
Total,	12	12	12	12	12	12	12	12	..	376

N.B.—Subscripts figures show approximate number of periods each month.

SUBJECTS OF TERM EXAMINATIONS.

434

[illegible]

SUBJECTS OF FINAL EXAMINATIONS.

Year.	Sub-head.	Examiner Class.			Trigram Class.			Upper Subordinate Class.			Lower Subordinate Class.			Department and Computer.			Mechanics and Appliances Class.		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Elementary Mathematics.	Arithmetic, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Algebra, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Geometry, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Trigonometry, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
Higher Mathematics.	Mensuration, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Co-ordinate Geometry and Conic Sections, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Differential and Integral Calculus, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Mechanics, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
Applied Mechanics.	Mechanics, Parts I. and II., ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Strength of Materials, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Stability of Structures, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Mechanisms, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
Natural Science.	Hydro-Mechanics, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Physiology, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Geology, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Mineralogy, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
Surveying, ..	Chemistry, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Electricity and Magnetism, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Heat, Sound and Light, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1
	Estimating, ..	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	1	1	1

SUBJECTS OF FINAL EXAMINATIONS.

●●●

[illegible]

BRITISH MILITARY SURVEYING CLASS.

(Extract from Army Regulations, India, Vol. II., para. 1381).

A Class is assembled annually at the Thomason College, Roorkee, for the instruction of 8 Non-Commissioned Officers of the British Army in the Bengal Presidency in Surveying and Road Reconnaissance. The Class is formed on the 1st November, and closes on the 31st July following.

1. Commanding Officers will forward to the Quarter-Master-General in India, Simla, on the 1st September of each year, nominal rolls of Non-Commissioned Officers whom they recommend to join the Class.

2. Only those men who volunteer to attend the Class, and who are of exceptionally good character, should be recommended, and the return should state the qualifications in Surveying, if any, of each candidate, his aptitude for the work, and also whether, in the opinion of the Commanding Officer, he is likely to be fitted for an Instructor in Surveying, regimentally or otherwise.

3. Those selected for instruction must have completed three years' army service, they will be required before being sent to the Class to extend their service to twelve years with the colours and should not have less than four years longer to serve in India.

4. It is desirable that the candidates should have passed by the Lower Standard Hindustani, but this qualification is not obligatory.

5. From these returns selection will be made of the 8 men to attend the Annual Class, and due notification will be given to Commanding Officers in view to the despatch of the men so as to reach Roorkee on the date specified.

6. Married men if detailed for the Class must not be accompanied by their wives or families, as there is no accommodation for families at the College.

7. A qualified Non-Commissioned Officer as Instructor is authorized for the Class, who will be appointed each year, and during the time the Class is undergoing training he will be granted the rank and pay

of a Color-Sergeant of Infantry. Higher rank and status will only be granted, if necessary, in special cases.

8. Each member of the Class receives a special allowance of Rs. 7-8 per mensem, in addition to his Regimental pay while undergoing the course at the College.

9. Each member having passed successfully will receive Rs. 5 per mensem so long as he continues doing duty with his Regiment in India, and provided that at an annual examination held by a Staff Officer of the District in which he is serving he shows that he has maintained a perfect knowledge of the subjects learned during his course in the College; should he fail to pass this test, the allowance will be withheld for that year by order of the General Officer Commanding.

10. The rank and name of each Non-Commissioned Officer in receipt of the special allowance of Rs. 5 per mensem should be shown in the Nominal Roll of candidates furnished annually by Commanding Officers.

The orders for grant of certificates are now as follows:—

To obtain the higher certificate, Students must gain two-thirds full marks in Surveying and two-thirds full marks in total.

To gain the ordinary certificate, half marks in Surveying and half marks in total must be gained.

SYNOPSIS OF COURSE.

Drawing.

Full Marks, 100.

- | | |
|--------------|---|
| <i>Plate</i> | I.—Italic Printing. |
| " | II.—Block " |
| " | III.—Construction of Scales. |
| " | IV.—Heights and Distances. |
| " | V.—Geometrical Figures. |
| " | VI.—Conventional Signs. |
| " | VII.—Plan of a Survey. |
| " | VIII.—Map Enlarging. |
| " | IX.—Map Reducing. |
| " | X.—Hill shading in Mezzotint. |
| " | XI.— " " " |
| " | XII.—Examination (Conventional Signs, Scales, Heights and Distances). |

Surveying.

Full Marks, 50.

Plate XIII.—Chain and Compass Survey (under instruction).

" XIV.— " " " (independent).

" XV.— " " Sextant "

*** Field Sketching and Reconnaissance.**

Full Marks, 100.

Plate XVI.—Road Sketch and Report (under instruction).

" XVII.— " " (independent).

" XVIII.—Intersection of Stations (under instruction).

" XIX.— " " (independent).

" XX.—Plane Table Sketch.

" XXI.—Sketch without Instruments.

" XXII.—Road Sketch and Report (Cavalry sketching case).

" XXIII.—River " " (" " ").

" XXIV.—Area Reconnaissance (about 19 square miles).

" XXV.—Contoured Sketch (under instruction).

" XXVI.— " " (independent).

" XXVII.— " " (combined).

" XXVIII.—Road Sketch and Report (about 18 square miles).

" XXIX.—Hill Route (under instruction).

" XXX.— " (independent).

" XXXI.— " (").

" XXXII.—Combined Hill Route Sketch about 25 square miles.

" XXXIII.—Sketch of a Position

" XXXIV.—Railway Reconnaissance about 12 miles.

Examination.

Full Marks, 50.

Plate XXXV.—Outdoor Examination. Sketch (about 5 square miles).

" XXXVI.—Indoor Examination. Paper in Military Topography and Surveying.

This course will be adhered to as far as possible, but the Instructor will make any alterations which may become necessary owing to bad weather, or any other unforeseen occurrence.

NATIVE MILITARY SURVEYING CLASS.

(Extract from Army Regulations, India, Vol. II., para 1331A).

A Class is assembled annually at the Thomason College, Borekee, for the instruction of a limited number of Native Officers, Non-Commissioned Officers or Men of the Bengal Native Army in Surveying and Road Reconnaissance.* The Class is formed on the 1st June and closes on the 31st March following.

(a). Commanding Officers will forward to the Quarter-Master General in India, Simla, punctually on the 1st February of each year, nominal returns of Officers, Non-Commissioned Officers or Men, whom they recommend to join the Class, and in the order of preference in which they would wish them to be selected when more than one name is submitted. From these returns selection will be made for the available vacancies, which will usually be 10 Men. Accommodation is not available at the College for the families of Students or for their horses.

(b). Only those who are likely to make good surveyors should be recommended, and they should be qualified in Urdu or Nagri dictation and in Arithmetic up to and including decimal fractions.

(c). A qualified Non-Commissioned Officer or Soldier will be appointed Assistant Instructor of the Class, and while so employed will receive the allowance prescribed in Army Regulations, India, Volume I., Part II., Article 355.

(d). With reference to Art 353, Army Regulations, Volume I., Part II., the following rules are laid down for regulating the permanent allowances to Non-Commissioned Officers or Men passing out of the Native Military Survey Class —

I. They will be required to furnish on the 1st September of the year following that in which they leave the College, a sketch of a position (not less than one square mile), or a reconnaissance report (of not

less than 10 miles in length), or some similar exercise drawn up under the orders of the Officer Commanding their Regiment, accompanied by a certificate* that the sketch has been performed without assistance. The sketch to be accompanied by a report, and the reconnaissance report by a sketch.

These reports and sketches will be sent to the District Staff Officer of the Command, who will grant, under the orders of the General Officer Commanding, a certificate,† which will be attached to the first copy of the pay bill of each Candidate, and will secure the allowances up to the 1st October of the following year.

II. Those who are unavoidably prevented (by absence on furlough, sickness, &c.) from submitting their sketches on the 1st September, will be permitted to do so as soon after as possible, and will, if their sketches or reports be approved of, be granted the allowance in arrears from the 1st October.

III. The yearly examination will be dispensed with in the case of men who may be employed, about the period in question, for the Intelligence Department, or for any practical purpose under the orders of officers of the Royal Engineers or Army Staff. These officers will, in that case, be empowered to grant the certificate necessary.

IV. Candidates who fail to obtain a certificate of efficiency annually at the appointed time will forfeit their allowances until the examination of the ensuing year, when they may, on passing, be resumed, but with effect from the 1st September of such year only.

* Certified that, as far as can be ascertained, this has been executed by _____
_____ without assistance.

Place, _____ *Lieut. and Adjutant.*
Date, _____ *Regiment.*

† Certified that _____ of the _____ Regiment
is entitled, under India Army Circulars, 1881, clause 92, to the allowance granted by
Army Regulations, India, Volume I, Part II., Art. 853.

Distribution of Studies and Examinations.

June,	}	Drawing.
July,		
August,		
September,	}	Theoretical instruction before going out into the field.
October,		Prismatic Compass and Plane Table sketching.
November,		
December,		Road reconnaissance.
January,	}	Contouring and sketching in Camp in hill country.
February,		
March,		Finishing sketches.

Examination will take place as follows :—

Marks.

1st Examination.	End of November or beginning of December.	
	Sketch of position with Prismatic Compass or Plane Table,	50
2nd Examination.	Beginning of January.	
	Road reconnaissance with Prismatic Compass,	50
3rd Examination.	Final Examination, March.	
	Sketch of position with contours or road reconnaissance with contours, and report,	100

The Marks for the whole Course will be allotted as follows :—

	Mathematics.				Surveying				Grand Total.
	Arithmetic.	Geometry.	Trigonometry.	Total.	Work in the Field, under instruction.	Work in the Field, independent.	Examinations.	Drawing.	
<i>Full Marks,</i>	30	30	40	100	50	150	200	200	700
<i>Higher Certificate,</i>	...	...	...	...	...	100	133	...	467
<i>Ordinary</i>	...	...	...	...	...	75	100	...	350

JUNIOR CIVILIAN SURVEY CLASS.

(Sanctioned by N.-W. P. and Oudh G. O. No. $\frac{2441}{1-980A}$, Dated 20th September, 1892).

An Assistant Collector attending the Survey Class at Roorkee is under the orders of the Principal of the College and of the Assistant Principal in charge of the Survey Class.

2. He should study such portions of the Thomason College Manual of Surveying or other works as may be indicated by the Principal or Assistant Principal.

3. He will first receive such theoretical instruction as may be necessary in Chain Surveying, Surveying with the Prismatic Compass and with the Plane Table, and in the use of the Optical Square and the Theodolite.

4. He will then be sent under the guidance of a selected official with the qualifications of a Kanungo to undertake the field survey of a Mouza or section of a Mouza. Two chainmen will be allowed to each Student.

5. Each Assistant Collector will be required to make the boundary survey of a village or block within a village, and then to fill in the detailed survey of the fields within the whole or a portion of the village or block.

6. He should make himself thoroughly conversant with the manner in which the khasra is prepared from the map, with the classification of the land as cultivated, culturable, or uncultivated, and with the settlement classification of soils. He should also learn how the other Patwaris' papers, of the village that is being surveyed, are prepared, especially the khewat, the khatauni, and the jamabandi. On all these points the Kanungo will afford the necessary instruction.

7. He will also be instructed how to take out areas both by computation and by the use of the area square, and he should work out the area of all fields in the Mouza surveyed.

8. Instructions will also be given in the best methods of checking the accuracy of existing maps both as regards their external boundaries and their interior survey, and the Kanungo will explain by reference to the Patwaris' papers of each Mouza the points to which special attention should be given at the annual inspection of Patwaris' work.

9. When the work done by the Assistant Collector has been tested and found correct, he should, after such examination as the Principal may consider necessary, be granted a certificate that he has a practical knowledge of revenue surveying and of its application to the system of land records.

Government N.-W. Provinces and Oudh, Notification No. ²³⁸ VII-238,
dated 31st January, 1896.

The Lieutenant-Governor and Chief Commissioner has been pleased to direct the substitution of the following rule for rule 16 of the rules for the departmental examination of officers in the North-Western Provinces and Oudh, which were published with Notification No. ²⁸⁷ VII-288, dated 16th December, 1893.—

Rule 16. In the case of Assistant Collectors and Assistant Commissioners an adequate acquaintance with practical surveying (with plane table) and with the general classification of soils has been declared, under General Department Notification No. 411, dated 13th February, 1882, to be a condition of passing by the Higher Standard in Revenue. For this purpose Assistant Collectors and Assistant Commissioners will be attached either to the Thomason College at Roorkee or to Survey parties for such period as Government may direct, and will not be finally passed by the Higher Standard in Revenue until they produce a certificate of proficiency from the officer in charge of the survey.

Notes.—1. The training of Assistant Collectors and Assistant Commissioners attached to Survey parties will be carried on during the cold weather months in each year in villages under survey by the party.

2. An Assistant Collector attending the class is under the orders of the officer in charge of the Survey party.

The following detailed programme should be followed during the period of study.—

- (1). Use of theodolite with the use of the prismatic compass and circular protractor as alternative instruments.
 - (2). Construction and use of scales.
 - (3). Traverse of a polygon with theodolite and chain of about 200 acres.
 - (4). Working out of all items of traverse table.
 - (5). Plotting from above
 - (6). Traverse and plot of a polygon with plane table and chain without theodolite plot.
 - (7). Detail survey of polygon of 200 acres.
 - (8). Extracting of field and other areas of the same with acre comb and by mensuration.
 - (9). Running check lines on survey villages or board plane direct, and also, in field-books and plotting the same.
 - (10). Writing up the khewat and khana-puri of about 150 fields.
-

THOMASON COLLEGE PRIZES.

ENGINEER CLASS.

THE COUNCIL OF INDIA PRIZE OF Rs. 1000.

To the most distinguished Student who shall obtain the Higher Certificate of qualification as Assistant Engineer.

THE THOMASON GOLD MEDAL

To the Student who shall furnish the best Engineering Design of the year, of a certain minimum excellence.

THE CAUTLEY GOLD MEDAL.

To the best Mathematician in the College who shall obtain not less than *two-thirds* the total marks

THE THOMASON PRIZE OF Rs. 250.

To the most distinguished Native Student who shall obtain the Higher Certificate

RAJ BAHADUR KUNHYA LAL'S GOLD MEDAL.

For the best Native Student of the year who shall not obtain the Thomason Prize

GENERAL MACLAGAN'S PRIZE. VALUE ABOUT Rs. 40.

For Experimental Science.

LIEUT.-COLONEL CLIBBORN'S PRIZE—SILVER MEDAL

For Civil Engineering.

ANNUAL PRIZES.

class

HIS HIGHNESS THE MAHARAJAH OF VISIANAGRAM'S PRIZE. VALUE ABOUT Rs 40.

For the best Athlete among the successful Native Engineer Class Students of the final year.

COLLEGE PRIZES. VALUE ABOUT Rs. 50.

SURVEYING. | DRAWING. | PHOTOGRAPHY.

UPPER SUBORDINATE CLASS.

KRAY MEMORIAL PRIZE. VALUE ABOUT Rs. 40.

For the best Batinator in the Class

RAI BAHADUR KURHYA LAL'S SILVER MEDAL.

For the best Native Student in the Class.

COLLEGE PRIZES. VALUE ABOUT Rs 50.

GENERAL MERIT.	SURVEYING.
MATHEMATICS.	DRAWING
CIVIL ENGINEERING.	PHOTOGRAPHY.

LOWER SUBORDINATE CLASS.

COLLEGE PRIZES VALUE ABOUT Rs. 30.

GENERAL MERIT.	SURVEYING.
MATHEMATICS.	DRAWING.
CIVIL ENGINEERING.	FEBROTIPS.

RAI BAHADUR KURHYA LAL'S SILVER MEDAL.

For the best Native Student in the Class.

*Colonel Macleagan's instructions regarding his Prize for Physical Science.
Extract from his letter, dated Lahore, 17th February, 1869.*

The Prize should continue to be given annually for excellence in the branch or branches of Physical Science in which instruction is given in the College at the time, if the most successful Student is considered deserving of it

I would desire that the Prize should, as heretofore, consist of useful and appropriate books. Hitherto it has been a bound copy of Humboldt, "Cosmos," translated by General Sabine. And I suggest that the same should continue to be given until a better or more suitable book or books can be obtained, at a cost within the amount provided. This should be determined annually by the Principal of the College and the Professor or Professors of Physical Science together, under the approval of the Local Government to which the College belongs, and so that the book or books chosen may, as far as possible, be in accordance with the recognised progress of Physical Science, and representative of the knowledge of the day.

RULES FOR SPECIAL EXAMINATIONS.

Besides the regular entrance, periodical, and final Examinations of the Students, the College undertakes the Examinations of Candidates for direct appointments to the several branches of the P. W. Department, including Assistant Examiners of Accounts and Accountants, 4th Grade, and also for promotion from the Lower to the Higher Grades of the Upper Subordinate Establishments and Accounts Branch.

SUB-ENGINEER

RULES REGARDING PROMOTION OF OVERSEERS TO GRADE OF SUB-ENGINEER.

*(Extract from Code of Regulations for the Public Works Department,
Vol I, Chapter II)*

69. In ordinary cases the grades of the Upper Subordinate Establishment, above Overseer of the 1st Grade, will be filled by promotions from the lower to the next superior grade.

70. Promotions will be made by selecting the individual who, from his good conduct, superior management, and the possession of a higher degree of a professional knowledge, as evinced by his passing the test known as the Higher or College standard at Roorkee, shall appear to be the most deserving of advancement.

71. No one will be admitted in, or promoted to, the grade of a Sub-Engineer without holding a certificate showing that he has passed the test referred to in paragraph 70, unless he is a person of a good character possessing special and superior qualifications as a practical Engineer.

The Higher Standard test mentioned in para. 70 of Code quoted above, is that passed by the most advanced Students of the Upper Subordinate Class on conclusion of their Course of Study at Roorkee. For Overseers who have not passed it at Roorkee, or who have been appointed to the Public Works otherwise than through Roorkee, but who desire to qualify for promotion, the following is the Examination. It is held

once a year in March, and Candidate's application should be submitted through his Departmental superior, so as to reach the Principal by February 1st.

LIST OF SUBJECTS.

<i>Subjects.</i>	<i>Sub-heads.</i>	<i>Full Marks</i>
I. <i>Mathematics,</i> ..	1. Arithmetic, ..	100
	2. Geometry. Euclid, Books I. to IV. and VI., or Cape, Chaps., 1, 2, 5, and 6, ..	100
	3. Plane Trigonometry, ..	75
	4. Mensuration, ..	125
II. <i>Mechanics,</i>	5. Elementary Statics, ..	75
III. <i>Estimating,</i>	6. A Building or Bridge, ..	150
IV. <i>Civil Engineering,</i> ..	7. Materials and Construction, ..	150
	8. Applied Mechanics, ..	75
	9. Design (a simple Building or Bridge), ..	75
V. <i>Surveying,</i>	10. Questions, ..	50
	11. Theodolite Surveying, ..	100
	12. Levelling, ..	75
VI. <i>Drawing,</i> ..	13. Construction of Scales and Outline Figures, ..	50
	14. Architectural Drawing, ..	100
	15. Topographical do., ..	75
VII. <i>Native Language,</i> ..	16. Written Exercise, ..	50
	17. Colloquial, ..	25
VIII. <i>English,</i> ..	18. Writing from Dictation, ..	40
	19. Reading, ..	10
Total, ..		1,500

To obtain a Certificate, the Candidate must gain at least *one-half* (750) of the total full marks, and not less than *one-third* in each separate sub-head.

N.B.—For a list of the text-books used in the College, and procurable at the College Book Depot, see page xlii. He must also furnish a Medical Certificate in the form printed on page xlii; no other form will be accepted. This Certificate must accompany his application for Examination. No certificates will be returned; attested copies may be sent.

Under the authority of Government, a fee of Rs. 10 must accompany the application for examination, otherwise it will not be attended to.

OVERSEER.**RULES REGARDING APPOINTMENTS OF "OUTSIDER" CANDIDATES TO
GRADE OF OVERSEER.**

(Extract from Code of Regulations for the Public Works Department,
Vol. I., Chapter II.)

49. Upper Subordinates may be appointed, from the Non-Commissioned Officers and Soldiers of Her Majesty's Army in India, or from Civilians, (European or Native)

52. The qualifications of Candidates must be attested by Certificates from the Principals of the Government Civil Engineering Colleges.

The Examination will be held yearly in March, detail as given below. Application should be submitted through an Executive Engineer, vide para. 61, Chapter II, P. W. Code, Vol. I., and should reach the Principal complete by 1st February at latest.

LIST OF SUBJECTS.

<i>Subjects</i>	<i>Sub Heads.</i>	<i>Full Marks.</i>
I. <i>Mathematics,</i>	1. Arithmetic,	100
	2. Geometry. Euclid, Books I. to IV. and VI, or Cape, Chaps. 1, 3, 5, and 6,	100
	3. Mensuration,	100
	4. Trigonometry. Heights and Distances and solution of plane triangles,	100
II. <i>Estimating,</i>	5. A sample Building or Bridge, ..	150
III. <i>Construction,</i>	6. Building Materials and General Construction,	100
	7. Tracing on the ground,	25
	8. Applied Mechanics,	100
	9. Questions and Exercises,	50
IV. <i>Surveying,</i> ..	10. Compass Surveying,	75
	11. Levelling,	75
V. <i>Drawing,</i> ..	12. Scales and Figures,	50
	13. Architectural Drawing,	75
VI. <i>Hindustani,</i>	14. Writing Exercise,	50
	15. Colloquial,	25
VII. <i>English,</i> ..	16. Writing from Dictation,	40
	17. Reading,	10
Total,		1,325

To obtain a Certificate, the Candidate must gain at least *one-half* (512) of the total marks, and not less than *one-third* in each separate sub-head.

N.B.—For a list of the text-books used in the College, and procurable at the College Book Depot, see page xlii. He must also furnish a Medical Certificate in the form printed on page xliii, no other form will be accepted. This Certificate must accompany his application for Examination. No certificates will be returned. attested copies may be sent.

Under the authority of Government, a fee of Rs. 10 must accompany the application for examination, otherwise it will not be attended to.

EXAMINATIONS FOR THE ACCOUNTS BRANCH.

[Public Works Department Resolution No. 36 A B., dated 9th February, 1893]

(This Resolution revises the Rules regarding the examination for confirmation and promotion as laid down in P. W. D. Code, Vol. I., Chap. II., and Appendix C.)

Recruitment of the Superior Establishment of the Accounts Branch,* Public Works Department.

RESOLUTION.—The Government of India, with the approval of the Secretary of State, is pleased to decide that, with effect from the 1st January, 1893, the following amended rules for recruitment of the Superior Staff of the Accounts Branch, both as regards the entrance and departmental tests, shall take the place of the rules promulgated under Resolution No. 19 A.E. of 25th January, 1889, and those laid down in the Public Works Department Code, Volume I., Chapter II., and Appendix C.—

I.—The Superior Accounts Branch shall be recruited in India, and the members of it so recruited shall be under the Indian Service Leave and Ordinary Pension Rules as laid down in the Civil Service Regulations, Chapter XIV. and Part IV.

II.—Appointments will ordinarily be made as follows.—

Firstly, by the appointment of candidates selected by competitive examination of not less than three nominees for each vacancy ;

* This rule is also applicable to the Traffic Department Examination, State Railways.

Secondly, by the promotion of deserving Accountants; and
Thirdly, by the transfer, in exceptional cases, of officers from the Engineer establishment.

Note—Officers transferred from the Engineering Branch will draw Accounts Branch rates of salary, but they will retain their own leave and pension rules.

The nominees at every third examination held for appointments to be filled by the first of the above methods of recruitment, shall be natives of India as defined by Statute 83 Viet, cap 3, section 6. The maximum number of appointments filled by the second of the above methods shall not exceed one-third of the appointments filled by the first and second methods together. When appointments are made by this method the officers selected will be appointed either as Deputy or Assistant Examiners at the discretion of the Government of India, and will, unless Government otherwise direct, take rank for future promotion above officers in lower classes or grades previously appointed after examination. They will not be required to pass the departmental examinations unless the Government at the time of appointment direct that they shall be so required.

The Government of India reserves the power which it at present possesses of making special and exceptional appointments to the Superior Accounts Establishment otherwise than in the three ways mentioned above.

III.—The classification and rates of pay shall be as follows:—

					Rs.
Examiner of Accounts,	Class I,	..	..	..	1,500
"	"	"	II,	..	1,250
"	"	"	III,	..	1,000
"	"	"	IV,	..	800
Deputy Examiner of Accounts,	"	I,	..	..	600
"	"	"	II,	..	400
Assistant Examiner, 1st grade,			..	..	300
"	"	2nd	"	..	250
"	"	3rd	"	..	200

This scale of pay will apply to all appointments to the department after the 31st December, 1892

IV.—Persons desiring to enter the Superior Accounts Branch must obtain nominations from the Accountant General, Public Works Department, to whom applications should be addressed not later than the 31st January of each year.

Each application must be accompanied by the following certificates:—

(1). Baptismal or other certificate of age.

- (ii). Certificate of physical fitness for the public service by a Commissioned Medical Officer or by a Medical Officer in charge of a civil station.
- (iii). Testimonials of good moral conduct from the instructor under whom the applicant has been educated or from some employer or other superior under whom he has been employed or brought up.

NOTE—*These testimonials should have special reference to conduct during the two years immediately preceding the date of application.*

No candidate will be examined whose age at the date of completion of the examination is below 18 or above 23 years. This rule applies to persons already in Government service.

V.—An examination will be held at which the nominated candidates will be required to compete for the vacant appointments which will be given, as a rule, to the successful candidates in order of passing the examination.

VI.—The Accountant General will report annually to the Government of India, as heretofore, in January, the names of the Accountants, if any, in the subordinate service, whom he recommends for promotion to the superior service.

VII.—After orders have been passed on that report, a notification will be issued in the *Gazette of India* about the beginning of February, stating the number of vacancies to be competed for at the next examination, and the dates on which it will be held.

2. The nominated candidates will be examined in the subjects described in the first Schedule to this Resolution, and (subject to the conditions hereinafter stated) those who pass will be appointed Assistant Examiners, 3rd grade, on probation, in order of merit, and to the extent of the number of vacancies announced for competition.

No candidate will be allowed to compete at the entrance examination more than twice.

The examination will be conducted by written questions and answers, the questions being prepared in such manner as His Excellency the Governor-General in Council may from time to time direct.

A candidate may be examined at the Thomson Civil Engineering College, Roorkee, or at the office of an Examiner of Public Works or Railway Accounts.

3. There will, in future, be two departmental examinations as detailed in Schedules II. and III. annexed to this Resolution, and no officer appointed on probation will be confirmed in the service until he has passed the first of these examinations, and has been favourably reported upon by the Accountant General.

An Assistant Examiner of the 3rd grade, who has been favourably reported on, and has passed the lower departmental examination shown in Schedule II., will be promoted to Assistant Examiner, 2nd grade, after not less than one year's service in the Department. An Assistant Examiner who has not passed that examination within three years from the date of his joining the Department will, on the expiration of that period, cease to belong to the Department without further orders, provided that —

- (1), if he has been examined but the results have not been declared, his services will be retained until the date on which the results are declared, when they will be terminated at once if he has not passed, and
- (2), if during the said period of three years he has obtained leave of absence on medical certificate for more than three months, he shall be allowed so much extension of time as will admit of his appearing for the examination next after the expiry of the said term of three years and of the results of that examination being declared

No officer will be eligible for promotion above Assistant Examiner, 1st grade, until he has passed the higher departmental examination, and the same test in vernaculars as is required for promotion to Executive Engineer, 4th grade.

4. The Entrance Examination will be held by the Principal, Thomson Civil Engineering College, Roorkee, in November* in the year 1897 and in June in subsequent years, and nominated candidates should apply to that officer to arrange the place at which they are to be examined, and should remit to him an examination fee of Rs. 82, which should reach him with their application not later than the 1st November. The second language it is proposed to take up should be stated in the application.

5. The Departmental Examinations will be held annually by the

* The Entrance Examination will be held during the last whole week in November, and in 1897 it will commence on the 22nd November. In subsequent years the examination will be held in the first week in June.

Accountant General, Public Works Department, in November; and will be conducted at Examiners' offices

SCHEDULE I.

Examination for Admission to the Superior Service of the Accounts Branch of the Public Works Department.

ENTRANCE EXAMINATION.

Subjects for Examination.

	Marks
Writing and Composition, impromptu essay upon some given subject,	150
English Literature,	100
English and Indian (Elementary) History,	100
Arithmetic (no special text-book),	175
Euclid, Books I to IV and VI, also easy deductions,	150
Algebra, including progressions, permutations, and combinations, binomial theorem, and logarithms (text-book—Todhunter's Algebra),	125
Plane Trigonometry* as far as properties of triangles (Text-book—Todhunter's Plane Trigonometry),	100
Mensuration,	100
Latin, Greek, Sanskrit, French, German, Arabic, Persian, or Pali,	200
Geography, Asia (especially India), and Europe,	150
Total,	1,350

No candidate will be appointed to the Department who obtains less than 650 marks in all, or less than half marks in Mathematics.

SCHEDULE II.

LOWER DEPARTMENTAL EXAMINATION.

Subjects for Examination.

	Marks
Composition, a précis of papers not seen before,	150
Book-keeping (Text-book—Wk Inglis),	250
Public Works Department Code, Volumes I, II, and III— (General rules and procedure and accounts of the Buildings and Roads and Irrigation Branches of the Public Works Department and of State Railways under construction),	300
Accountant General's circulars,	50
Civil Service Regulations,	250
Total,	1,000

* The use of Logarithms will be allowed at the time of examination for Trigonometry only, with this exception no books are permitted in any of the papers.

SUBORDINATE ESTABLISHMENT OF THE ACCOUNTS BRANCH. sixth

**SCHEDULE III.
HIGHER DEPARTMENTAL EXAMINATION.**

Subjects for Examination.

	<i>Marks</i>
A précis and a draft,	150
Civil Account Code, Volume I., Chapters 10, 17, 24 & Volume II., Chapters 33, 34, 38, 62, and 74, &c.	100
Political Economy (Mill),	200
Public Works Department Code, all volumes, but specially Volume IV — (The accounts of open lines of State Railways), and Accountant General's circulars and budget procedure,	300
Book-keeping, including the principles of audit (Text-books—Carter's Practical Book-keeping and Pixley's Auditors),	250
Total,	<u>1,000</u>

I.—An officer who shows at any departmental examination a competent knowledge of all the prescribed subjects, and obtains half marks in the aggregate, is held to have passed the examination. An officer is, however, permitted to pass each of the departmental examinations in two instalments if he notifies his intention beforehand, and specifies the subjects in which he is prepared for examination. In such case a higher standard of knowledge is required.

II.—As a rule, a candidate failing in one of the subjects specified is re-examined in the whole, but in case of marked excellence in a subject the Accountant General may exempt the candidate from re-examination in such subject, even although he may have failed in others.

SUBORDINATE ESTABLISHMENT.

**EXAMINATION QUALIFYING ACCOUNTANTS FOR PROMOTION TO THE
2ND GRADE.**

APPENDIX C, VOL. I., P. W. D. CODE.

22. This examination consists of three parts as follows —

Part I.—General.

24. Examination in this part will be held by the Principal, Thomason Civil Engineering College, Roorkee, in January, and applications to be registered for this test should reach the Accountant General's office not later than the 1st December of each year.

	Full Marks.
English and Writing from Dictation,	50
Arithmetic, <i>Coleman's</i> ,	75
Elementary Geometry, <i>Beck's</i> , Book I and Problems, ..	50
Measurement of Planes and Solids, <i>Tidkunter's</i> ,	75
Logarithms, use of,	50
General Geography, <i>Sullivan's</i> , Sec II, Political and Local, ..	50
Total, ..	350

Note—Candidates who have already passed in Writing from Dictation, Arithmetic and in Measurement in the Entrance Examination referred to in para. 2, need not be re-examined in those subjects.

25. To pass this test, a Candidate must obtain not less than *three-quarters* of full marks in Arithmetic, *one-half* full marks in each other subject, and 200 marks in total.

Part II.—Composition.

Part III.—Examination in Accounts.

26. The examination papers for these tests will be furnished yearly from the Accountant General's office in July and November respectively, on applications which should reach that office not later than 1st June and 1st October respectively.

(See *P. W. Code* for further details).

APPOINTMENT AS ACCOUNTANT,

APPENDIX C—(continued).

1. As a general rule no one will be admitted into the Accounts Branch of the Public Works Department otherwise than by entering as an Accountant, 4th Grade, before he attains the age of 25 years, and until he passes the examination prescribed in para. 9.

2. The following are exceptions to this rule—

- (1). A Candidate already in permanent Government employ* may be allowed to compete in the examination even if he is more than 25 years of age, and may be appointed to an Accountantship if he passes it; but if he is not already in pensionable service, he will be eligible only for appointment to the Non-pensionable Establishment on State Railways.

* This term includes employment under Local Boards and foreign bodies, if such is pensionable by the British Government.

(7). Upper Subordinates in the Executive Branch, who have passed the test for Overseer only, will be required to pass the special examination for the Accounts Branch, but in cases where Candidates shall have displayed such capacity in their accounts as shall be considered sufficient by the Government of India to prove their fitness for the Accounts Branch, the special examination may be dispensed with.

(8). A Candidate who has passed the examination for admittance to the Engineer Class of the Thomason College, or who may gain the minimum number of marks required to pass the Examination for entrance to the Superior Accounts Branch, but who fails to secure one of the appointments offered for competition, will not be required to pass this examination, except in Book-keeping.

3. The qualifications of Candidates for appointment as Accountant, 4th Grade, will be attested by certificates from the Principal of one of the Government Civil Engineering Colleges.

4. No degrees, diplomas, or certificates gained elsewhere, can be accepted as affecting the terms of the special examination. If any Candidate wishes to raise the question as to whether any such degrees, &c., held by him can be admitted in lieu of the prescribed special examination, he should address the Accountant General, Public Works Department, on this point.

5. Candidates for the 4th Grade of Accountants will usually be examined by the Thomason Civil Engineering College during the latest whole week in November, and by the Sibpur Civil Engineering College on the first Monday in June. The Examination will be *ipso facto* vitiated if it be not held (begun and completed) on the dates fixed, but the Officer who will conduct the examination may make his own arrangements in regard to the *place* and *hour* of Examination with the Candidates.

6. Examinations are held only at the Colleges, or at the office of an Examiner of Public Works Accounts (including Railway and Telegraphs). The Examinations of the Thomason College are held only in the North-Western Provinces and Oudh, the Punjab, the Central Provinces, Hyderabad, Central India, and Rajputana, and those of the Sibpur College, in Bengal, Assam, and Burma only.

Note—Candidates in Calcutta appearing for the Sibpur College Examination will have to undergo the Examination at the College

7. The Candidate for the Thomason College Examination should apply to an Examiner of Accounts, at a station within the territorial limits fixed in the preceding paragraph for this Examination, not later than the 15th October, and the Candidate for the Sibpur College Examination should similarly apply to an Examiner of Accounts within the limits fixed for that Examination, not later than 30 days previous to the date fixed for the Examination. Applications received after these dates will not be considered. The Candidate should state whether he wishes to be examined at the College or at the office of the Examiner of Accounts to whom his application is made. The application should bear the address of the Candidate, and must be accompanied by a fee of Rs 10, and the following certificates. Certificates may be submitted in original, or true copies, attested by an Officer of the Engineer or Accounts Branch, but none will be returned—

- (1) Certificate of good character signed by Candidate's immediate official superior, by the instructor under whom he has been educated, or by some other superior under whom he may have been brought up or employed, or to whom he may be well known. (This certificate must have special reference to the two years immediately preceding the application)
- (2) Certificate of age—baptismal or of birth—(not required if the Candidate is already in permanent Government employ)
- (3) Certificate that the application is in the Candidate's hand-writing.

Note—A Candidate already in Government service should, in like manner, submit his application through his immediate official superior to an Examiner of Accounts qualified to hold the particular Examination and should state whether he desires to be examined at the office of the Examiner of Accounts concerned or at the College

8. It will rest with the Examiner of Accounts to whom the Candidate submits his application, to decide on a consideration of the certificates submitted, whether the Candidate should be allowed to appear for the Examination, or whether his application should be rejected. The Examiner of Accounts will then forward to the Principals for registration the names of the accepted Candidates. The names of these Candidates should be entered in a statement showing their ages and their addresses, and also showing where each Candidate is to be examined, whether at the College or at the office of the Examiner of Accounts. This statement, together with the fee, should be transmitted to the Principals not later than 15 days after the dates fixed in

the preceding paragraph for the submission of applications of Candidates.

9 Examination papers, for registered Candidates only, will be sent from the College to the Officers conducting the examination in time for the fixed dates. The following are the subjects of examination, and the number of marks in each :—

	Full Marks	Minimum passing marks
Writing, (<i>neatness, clearness and rapidity</i>), ..	100	50
Dictation, (<i>spelling, punctuation, &c.</i>), ..	100	50
Arithmetic, (<i>the whole</i>),	240	120
Mensuration, (<i>the whole</i>),	60	30
Book keeping, (<i>mercantile</i>),	100	50
Total, ..	600	400

10. The text-books are—

for Book-keeping—

- (1), "Book-keeping" by Bell and Hamilton ;
- (2), "Book keeping by double and single entry," by W Inglis (Chambers' Educational Course),

and for Mensuration—

- (1), Todhunter's Mensuration for Beginners

11 Examination papers that are issued for examination need not be returned.

12. Each examination is complete in itself. A Candidate who has failed in an examination, and presents himself for examination on a subsequent occasion, must undergo the full examination, and furnish a fresh fee and certificate.

13. The Civil Engineering College acts solely as an examining body in reference to admission to the 4th Grade of Accountants, Public Works Department

14 Passed Candidates should apply, not to the Principal of the College nor to the Accountant General, but direct to the Examiner of Public Works Accounts in the Province or Railway under whom they may desire to be employed.

15. It must be distinctly understood that the passing of this examination does not give any claim to appointment, and that in making appointments preference will be given to qualified persons who are already employed in the Department.

ANNEXI RULES FOR SPECIAL EXAMINATIONS—APPOINTMENT AS ACCOUNTANT.

16. In the Bombay Presidency this examination is held at the College of Science, Poona, under rules published by the Government of Bombay.

17. In the Madras Presidency this examination is held by the Principal, Civil Engineering College, Madras.

COPIES OF THE RULES AND PAPERS FOR EXAMINATION.

Copies of the rules relating to Examination for Entrance into the several Departments of the College, as well as for "Outsider" Candidates for the Subordinate and Accountant Establishments of the D. P. Works, are obtainable, on application, from the College.

The Examination Papers for all Classes of "Outsiders" are either selected from, or are similar to, the papers set in Entrance, Monthly, and Final Examinations to the College Students; so that the papers published in the Calendar are samples also of the "Outsiders" Examination.

SUBSIDIARY DEPARTMENTS OF THE COLLEGE.

LIBRARY.

The College Library consists of 17,140 volumes, classified as under :—

Class A. Mathematics,	411	Class H. Fine Arts,	389
" B Physics,	503	" K Arts and Manufactures, ..	308
" C Phenomenal,	1,728	" P. Literature,	3,609
" D. Moral, Mental, and Social Science,	627	" Q. Travels and Descriptive Works,	1,515
" E. History,	1,519	" X Indian Govt Records, ..	2 163
" F Mixed Professional, ..	887	" Z General Miscellaneous, ..	3,315
" G. Engineering,	1,494		

It is free to all Government Officers, and out-station residents can obtain books on application, and retain them for two months at a time.

There is a printed Catalogue, and a Supplement is issued every year, which can be obtained on application to Curator, Book Depot.

The last Supplement is corrected up to 10th February, 1897.

PRESS.

The College Press executes Printing, Lithography, Photo-Zinco-graphy and Binding of every description, primarily for the College publications, but also for the General Public.

BOOK DEPOT.

The Book Depot receives and sells the various publications of the College Press; of which printed Catalogues can be obtained *free* on application.

PHOTOGRAPH CLASS.

Over 500 views of scenes in the Himalayas, Buildings of interest all over Northern India, works on the Upper and Lower Ganges Canals, &c., on sale. Catalogue on application to INSTRUCTOR OF PHOTOGRAPHY.

YEARLY LIST OF STUDENTS.

1848.

No.	Name.	Rank and Corps, and where educated.	Remarks.
UPPER SUBORDINATE CLASS.			
1	Hawthorne, T. D.,	..Gr, 2nd Cy 4th Bt. Arty.	
2	Roberts, J.,	..Gr, 2nd Tr 2nd Br H. Arty.	
LOWER SUBORDINATE CLASS.			
1	Har Nārāyan, *	..Delhi College	
2	Kanahya Lal,	..Delhi College	

1849.

UPPER SUBORDINATE CLASS.			
1	Davidson, J.,	..Sergt, 1st Cy 3rd Bt. Arty	
2	Wollaston, D. O.,	..Gr, 1st Cy 3rd Bt. Arty	
3	Ogle, M.,	..Sergt, 1st Cy 3rd Bt. Arty	
4	Virgin, J. R.,	..Corpl, 3rd Cy 2nd Bt. Arty	
5	Saxton, P.,	..Gr, 3rd Cy 2nd Bt. Arty.	
6	O'Donnell, G.,	..Private, 1st E B F.	
7	Hambrough, F.,	..	
LOWER SUBORDINATE CLASS.			
1	Fakul Hussain,	..Delhi College.	
2	Wajl-tā-din,	..Manglaur	
3	Paym Háj,	..Delhi College.	
4	Kamr-ūd-din,	..Delhi College.	
5	Rahmat Ullah,	..Delhi College.	
6	Zaffer-ūd-din,	..Roorkee.	
7	Jamāyat Ali,	..Roorkee.	
8	Nāsur Hussain,	..Roorkee.	
9	Fraz Sukh,	..Manglaur	

1850.

ENGINEER CLASS.			
1	Platts, J. T.,	..England.	

1850.

No	Name.	Rank and Corps, and where educated.	Remarks.
UPPER SUBORDINATE CLASS.			
1	Fitzpatrick, P.	.. Gr, 3rd Cy 6th Bt. Arty	
2	O'Donoghue, F. E.	.. Gr, 3rd Cy 6th Bt. Arty	
3	Dillon, L.	.. Gr, 1st Cy 6th Bt. Arty	
4	Nolan, G.	.. Gr, 4th Cy 4th Bt. Arty	
5	Rae, J. F.	.. Corpl, 4th Cy 2nd Bt. Arty	
6	Wellsted, J.	.. Corpl, 1st Cy 6th Bt. Arty	
7	Swan, G.	.. Corpl, 2nd Cy 1st Bt. Arty	
8	Cortigao, S. S.	.. Bugr, 2nd Cy 1st Bt. Arty	
9	Parker, W.	.. Sergt, 4th Cy 3rd Bt. Arty	
LOWER SUBORDINATE CLASS			
1	Mamh Ullah.	.. Delhi College.	
2	Kanhaya Lal.	.. Delhi College	
3	Jai Dayal.	.. Delhi College.	
4	Mahbub Ali.	.. Delhi College.	
5	Mala Bakhsh.	.. Mangalore	
6	Lutfullah Khan.	.. Bareilly	
7	Dalidar A. H.	.. Delhi College	
8	Masbuk Ali.	.. Bareilly School	
9	Abdur Rahman (2).	.. Delhi College	
10	Kedrat Ullah.	.. Meerat.	

— 6 —
1851.

ENGINEER CLASS.

1	Scott, C. F.	..	
2	Auderson, C.	..	
3	Conner, F.	..	
4	Amir Khan.	.. Delhi College.	
5	Boulton, C. F.	..	
UPPER SUBORDINATE CLASS			
1	Mitchell, H. E.	.. Corpl, 2nd E. H. F.	
2	Dundy, D.	.. Sergt, 3rd Cy 2nd Bt. Arty	
3	Lennon, J. F.	.. Gunr, 1st Cy 3rd Bt. Arty.	
4	Jones, T. F.	.. Corpl, 3d Tr 3d Br H Arty	
5	Wilson, T. H.	.. Gunr, 4th Cy 3rd Bt. Arty	
6	Baker, A.	.. Sergt, 3d Cy 3d Bt. Arty	
7	Lester, J., alias Brown.	.. Bomr, 3d Cy 3d Bt. Arty	
8	Goodland, F.	.. Corpl, 2d Cy S & Miners.	
9	Reynolds, H.	.. Bugr, 2nd Cy 1st Bt. Arty	
10	Beasley, W.	.. Bomr, 3d Cy 1st Bt. Arty	
11	Finn, J.	.. Sgt, 3rd Tr 3d Br H Arty	
12	Whelan, J.	.. Bomr, 3d Cy 6th Bt. Arty	
13	McKenny, S.	.. Gunr, 1st Cy 2nd Bt. Arty.	
14	Maitland, O.	.. Private, 2nd E. H. F.	
15	Sheehan, J.	.. Gunr, 3rd Cy 4th Bt. Arty	
16	Chalson, J.	.. Corpl, 2nd Cy, S & Miners.	

YEARLY LIST.

1851.

No	Names.	Rank and Corps, and where educated	Remarks.
17	Vaughan, C,	.. Gunr, 2nd Cy 2nd Bt. Arty.	
18	McMillan, E,	.. Gunr, 4th Cy 1st Bt. Arty	
19	Murphy, J,	.. Gunr, 1st Cy. 4th Bt. Arty	
20	Platts, F,	..	
LOWER SUBORDINATE CLASS			
1	Sahib Sahay,	.. Bareilly School	
2	Kedarnath,	.. Delhi College	
3	Mohan Lal,	.. Delhi College	
4	Mansh Ullah,	.. Delhi College	
5	Nathu Singh,	.. Roorkhee,	
6	Nasir Hussain,	.. Manglamr	
7	Muhammed Ismail,	.. Delhi College	
8	Fawaz Hussain (S),	.. Delhi College	
9	Ullah Baksh,	.. Deoband	
10	Karim Ullah Khan,	.. Delhi College.	
11	Faisal Hussain (S),	.. Manglamr	
12	Rasim Ali,	.. Delhi College.	

1852.

ENGINEER CLASS.

1	Hogan, W	..
2	Hari Charn,	.. Agra College
3	Kanhaya Lal,	.. Agra College

UPPER SUBORDINATE CLASS.

1	McCulloch, W,	.. Private, 1st E B F
2	Green, G,	.. Corpl, 4th Cy 1st Bt. Arty
3	Gilchrist, J,	.. Corpl, Sappers and Miners.
4	Kirchoff, C. D,	.. Private, 2nd E B F
5	Stolle, C,	.. Far, 1st Tr 3d Br H Arty
6	Duncan, M,	.. Gr, 3d Tr 2nd Br H Arty.
7	Stewart, J,	.. Private, 1st E. B F
8	Mitchell, W,	.. Gunr, 1st Cy 6th Bt. Arty
9	Scott, W,	.. Corporal, 2nd E B F
10	Robson, E,	.. Corporal, 2nd E. B F.
11	Thackwell, H,	.. Private, 2nd E. B F
12	Fullerton, J,	.. Corpl, Sappers and Miners.
13	McIntyre, S,	.. Gunr, 1st Cy 6th Bt. Arty
14	Rivett, W,	.. Private, 2nd E B F
15	Rice, S,	.. Sergt, 2nd Cy 5th Bt. Arty
16	Carmichael, A B,	.. Corpl, Sappers and Miners
17	Walker, C,	.. Private, 2nd E B F
18	McKay, M,	.. Corpl, 3rd Cy 1st Bt. Arty
19	Lonsdale, E,	.. Gunr, 3rd Cy 6th Bt. Arty
20	Kennedy, W,	.. Begle-Major, 6th Bt. Arty
21	Johnson, W,	.. Bomr, 1st Cy 6th Bt. Arty
22	Jean, E,	.. Corpl, 3rd Cy. 3rd Bt. Arty
23	McClusky, J,	.. Bomr, 3rd Cy 6th Bt. Arty

1852.

No.	Name.	Rank and Corps, and where educated.	Remarks.
LOWER SUBORDINATE CLASS.			
1	Abdul Razak,	.. Delhi College.	
2	Gulam Hyder,	.. Delhi College.	
3	Muhamm. Lal,	.. Meerabad.	
4	Abdur Rahman,	.. Delhi	
5	Ahsan Ullah,	.. Meerut.	
6	Kashaya Lal,	.. Najibabad	
7	Fazal Hussain,	.. Delhi College	
8	Fateela Khan,	.. Agra College.	
9	Yad Ali,	.. Delhi College.	
10	Ali-ud-din,	.. Khatampur	
11	Sheikh Ahmad,	.. Delhi College	
12	Hargo Lal,	.. Rohtak.	

1853.

ENGINEER CLASS.

1	Swetskam, E.	..	
2	Nethali, H. J.	..	.. Prize for Mathematics.
3	Milman Mure,	.. Free Church Institution	
UPPER SUBORDINATE CLASS			
1	McNeil, J.	.. Private, 2nd R. B. F.	
2	FitzHenry, W.	.. Bombr., 2nd Cy 6th Bt. Arty.	
3	Graham, J.	.. Corpl., Sappers and Miners.	
4	Moh, J.	.. Gunr., 3rd Cy 6th Bt. Arty.	
5	Young, J.	.. Gunr., 2d Tr 2d Br H. Arty.	
6	Clarke, J.	.. Corpl., 4th Cy 1st Bt. Arty.	Prize for Drawing
7	McInerney, T.	.. Corpl., 2d Tr 2d Br H. Arty.	Prize for Drawing
8	Buley, J.	.. Corpl., Sappers and Miners.	Prize for Mathematics and Urdu.
9	Gadden, J.	.. Cpl., 2d Tr 2d Br H. Arty.	
10	Atchison, J.	.. Corpl., 1st Cy. 1st Bt. Arty.	
11	Duggan, M.	.. Sergt., 1st Cy 1st Bt. Arty.	Prize for Civil Engineering
12	Cox, G. F. F.	.. Bombr., 3rd Cy 1st Bt. Arty.	
13	Brian, J. alias P.	.. Gunr., 1st Cy. 1st Bt. Arty.	
14	Sandy, F.	.. Corpl., 1st Cy 1st Bt. Arty.	
15	Charlton, J.	.. Sergt., 1st Cy 1st Bt. Arty.	
16	Montgomery, C.	.. Corpl., Sappers and Miners.	
17	McGowan, W.	.. Private, 1st B. B. F.	
18	Todd, J.	..	
19	Broadshaw, T.	..	
20	Fraser, T.	..	
21	Sharpe, W.	..	.. Prize for Drawing
22	Polites, C.	..	.. Prize for Mathematics
23	Stacole, D.	..	
24	Nicholson, K.	..	
LOWER SUBORDINATE CLASS.			
1	Kadim Ali,	.. Delhi College.	

1853.

No.	Names.	Rank and Corps, and where educated	Remarks
2	Ganesh Lal,	.. Saharapur.	
2	Gurdhara Lal,	.. Bareilly College.	
4	Abdullah,	.. Deoband	
5	Akbar Beg,	.. Delhi College,	.. Prizes for Civil Engineering and Surveying
6	Mushtak Ahmad,	.. Deoband.	
7	Ahmad Mir,	.. Boorkee.	
8	Dalla Ram,	.. Delhi.	

1854.

ENGINEER CLASS

1	Bean, L. B.,	..	.. Prize for Surveying
2	Beilke, G.,	.. Lieut, Artillery.	
2	Earle, E. L.,	.. Lieut, Artillery	
4	Swetenham, G.,	..	.. Prize for General Merit
5	Scott, H. H.	..	
6	Garbett, H.,	..	.. Prize for Civil Engineering.
7	Hanna, S. G.,	..	.. Prize for Surveying
8	Asma-Ullah	..	
9	Whish, C. B.,	.. Lieut, 14th Light Dragoons	

UPPER SUBORDINATE CLASS.

1	McGulvray, W.,	.. Sgt, 3rd Tr 1st Br H. Arty	
2	Drummond, G.,	.. Corpl, 1st Cy. 8th Bt. Arty	Prizes for General Merit and Civil Engineering
3	Murray, F.,	.. Corpl, 4th Cy 8rd Bt. Arty	
4	Leay, P.,	.. Staff Sgt, 2d Cy. 3d Bt. Arty	Prize for Surveying
5	McKeown, J.,	.. Ge, 3rd Tr 1st Br H. Arty	
6	Brown, J.,	.. Gunner, 1st Cy 2d Bt. Arty	
7	Cooper, J. W.,	.. Gunner, 1st Cy 2d Bt. Arty	
8	McKechnie, J.,	.. Gunner, 1st Cy 2d Bt. Arty.	
9	Forrest, R.,	.. Corpl, 4th Cy 8rd Bt. Arty	
10	Taylor, W.,	.. Corpl, 1st Cy 8th Bt. Arty	
11	Lynch, M.,	.. Gunr, 2d Cy 5th Bt. Arty	
12	Hall, G. F.,	.. Private 1st E. B. F.	
13	Cahill, D.,	.. Gunr, 3rd Cy 2nd Bt. Arty	
14	Leach, W.,	.. Gunr, 3rd Cy 3rd Bt. Arty	
15	Austin, J.,	.. Gunr, 4th Cy 3rd Bt. Arty	
16	O'Donnell, H.,	.. Gunr, 4th Cy 3rd Bt. Arty.	

LOWER SUBORDINATE CLASS

1	Sheikh Ahmad,	.. Delhi College	
2	Momab Bakhsh,	.. Boorkee.	
2	Mallik Chand,	.. Bareilly College.	
4	Sheikh Becha,	.. Boorkee,	.. Prizes for Civil Engineering and Drawing
5	Momab Ray,	.. Boorkee,	.. Prize for General Merit
6	Mirza Jan,	.. Delhi College.	
7	Mirza Hussain,	.. Boorkee	

TRAVEL LIST.

1854.

No.	Name.	Rank and Corps, and where attached.	Remarks.
8	Yasut Beg,	.. Roorkee.	
9	Kundan Lal,	.. Roorkee	
10	Faksh Khan,	.. Delhi,	.. Prize for General Merit
11	Rana Gopal,	.. Agra School,	.. Prizes for General Merit, Civil Engineering and Surveying
12	Mahammad Hasan,	.. Roorkee.	
13	Jasadi-ud-din,	.. Bareilly College,	.. Prize for General Merit.
14	Gopal Prasad,	.. Bareilly College	
15	Jawahir Lal,	.. Agra College,	.. Prizes for Mathematics and Civil Engineering.
16	Fakhr-ud-din,	.. Bareilly College	
17	Abbas Ali,	.. Delhi College	
18	Sankar Lal,	.. Deoband.	
19	Ibrahim Khan,	.. Roorkee.	
20	Sadik Ali,	.. Bareilly College.	
21	Farwasan Ali,	.. Roorkee	
22	Mohib Ali,	.. Roorkee.	
23	Muham-ud-din,	.. Jagadhri	
24	Moti Lal,	.. Agra School.	
25	Shib Narayan,	.. Manglaur.	
26	Jamun Das,	.. Saharanpur,	.. Prize for Drawing
27	Mala Baksh,	.. Deoband	
28	Habibul Rahman,	.. Roorkee,	
29	Lachma Chand,	.. Roorkee.	
30	Jai Lal,	.. Roorkee.	
31	Harcham Das,	.. Agra School.	

1855.

ENGINEER CLASS.

1	Bolton, C,	..	.. Prize for General Merit
2	Forrest, R. E.,	..	.. Prize for General Merit.
3	Tulloch, A.	.. Lieut., 58th N Infantry	
4	Marshall, W.	.. Lieut., 48th N. Infantry	
5	Ram Prasad	..	
6	Madhusudan Chatterjee,	..	.. Prizes for General Merit, Mathematics and Surveying.

UPPER SUBORDINATE CLASS.

1	Roberts, W.,	.. Or, 4th Cy-2nd Bt. Arty,	Prizes for General Merit, Civil Engineering and Drawing.
2	Murphy, T,	.. Cpl, 2nd Cy 6th Bt. Arty	
3	Gardner, T.,	.. Br, 2nd Cy 6th Br H Arty	
4	Tuck, J J,	.. Gr, 2nd Tr 2nd Br H Arty	
5	Sharpe, J. H.,	.. Ge., 2nd Cy, 6th Bt. Arty.,	Prize for Surveying.
6	Grace, J. E.,	.. Sgt., 2nd Tr 1st Br H Arty	
7	Wilson, W.,	.. Sergt., 2nd Cy 6th Bt. Arty	
8	Donovan, J.	.. Gunr, 1st Cy 2nd Bt. Arty	
9	Looby, M.,	.. Gunr, 2nd Cy, 6th Bt. Arty	
10	McLeod, J.,	.. Gunr, 2nd Cy 6th Bt. Arty	
11	Hansley, M.,	.. Gunr, 3rd Cy, 6th Bt. Arty	

EXAMINER LIST.

7

1855.

No	Names.	Rank and Corps, and where educated.	Remarks.
13	Murray, J.	.. Gunr, 3rd Cy 3rd Bt. Arty	
13	Meeshan, W.	.. Private, 1st E. B. F.	
14	McMahon, J.	.. Private, 1st E. B. F.	
15	Sheehan, W.	.. Gr, 1st Cy 6th Bt Arty	
16	Macosy, J.	.. Gr, 3rd Tr 1st Br H Arty	
17	Taylor, W.	.. Gr, 4th Cy 1st Bt. Arty	
LOWER SUBORDINATE CLASS			
1	Jawahir Lal,	.. Agra School,	.. Prize for General Merit.
2	Sahab Ray,	.. Bareilly College,	
3	Koth-ad-din,	.. Bareilly College,	
4	Shambhū Dī,	.. Roorkee,	.. Prize for General Merit.
5	Nadir Husain,	.. Roorkee	
6	Muhammed Ismail (1)	.. Saharanpur	
7	Muhammed Ismail (2)	.. Saharanpur,	
8	Sant Lal,	.. Nakur,	.. Prize for General Merit.
9	Habibullah,	.. Saharanpur	
10	Ajodhya Prasad,	.. Manglaur	
11	Sankar Lal (1),	.. Deoband,	
12	Sankar Lal (2),	.. Roorkee	
13	Bahari Lal,	.. Deoband	
14	Bahn Baksh,	.. Kuratpur	
15	Mām Prasad,	.. Deoband.	
16	Bhagwan Dās,	.. Manglaur	
17	Lahk Lal,	.. Manglaur	
18	Dul Sukh Rām,	.. Agra School,	
19	Karamat Ali,	.. Roorkee	
20	Roshier Singh,	.. Roorkee	

1856.

ENGINEER CLASS.

1	Whish, H. E.	.. Engineer, 26th N Infantry	
2	Macrae, W. B.	.. ..	.. Prize for Drawing
3	Dickens, T. C.	.. Lieut., Artillery,	.. Prize for General Merit
4	Wright, T.	.. Lieut., 46th N Infantry,	

UPPER SUBORDINATE CLASS

1	Lewson, J.	.. Corpl, Sappers and Miners	Prize for Mathematics
2	Davis, G.	.. Bomb, 3rd Tr 3rd Br H Arty	Prize for General Merit.
3	Graham, W.	.. Gr, 3rd Tr 2nd Br H Arty	Prize for Surveying.
4	Hurst, J.	.. Corpl, Sappers and Miners	Prize for Drawing
5	McPhae, A.	.. Sergt, Sappers and Miners	
6	Macnamara, M.	.. Gr, 3rd Cy 6th Bt Arty	
7	Burns, G.	.. Corpl, Sappers and Miners	
8	Martin, J.	.. Sgt, 2d Tr 2nd Br H Arty	
9	Brown, J.	.. Corpl, Sappers and Miners	
10	Stewart, J. A.	.. Gr, 3rd Cy 4th Bt Arty,	Prize for General Merit.
11	Wilson, J.	.. Corpl, Sappers and Miners	
12	Barry, J.	.. Br, 3rd Tr, 1st Br. H Arty	

1856.

No.	Name.	Rank and Corps, and where educated.	Remarks.
13	Burton, R. G.	Private, 1st E. B. F.	
14	McPherson, J.	Private, 2nd E. B. F.	
15	Coomings, W.	Mounted, 9th Lt. Cavalry	
16	Parcell, T.	Gr. 2nd Tr. 1st Br. H. Art.	
17	Martin, A. C.	Gr. 1st Cy. 2nd Br. H. Art.	
18	Duffy, R. J.	Tr. 2nd Tr. 2nd Br. H. Art.	
19	Rowe, W.	Gr. 3rd Tr. 1st Br. H. Art.	
20	McCarthy, T. F.	Corpl. Sappers and Miners.	
21	Macnamara, P.	Cpl. 8th Cy. 2nd Bt. Art.	
22	Brotherton, J.	Gr. 4th Cy. 8th Bt. Art.	
23	Dennis, F. J.	Cpl. 3rd Cy. 2nd Bt. Art.	
24	Corcoran, C.	Cpl. 3rd Tr. 1st Br. H. Art.	

LOWER SUBORDINATE CLASS

1	Muhammad Anwar.	Doonbad	
2	Gobind Prasad.	Aligarh.	Prize for Drawing.
3	Ram Prasad.	Behāranpur.	Prize for General Merit.
4	Amur Humara.	Roorkee.	Prize for General Merit.
5	Baldeo Prasad.	Agra College.	Prize for General Merit.
6	Lakri Prasad.	Bareilly College.	
7	Dharna Lal.	Aligarh.	
8	Abdul Gaffur.	Behāranpur.	
9	Savas Lal (1).	Roorkee.	
10	Nor Muhammad.	Roorkee.	
11	Muhammad Ali (1).	Roorkee.	
12	Kasid Ali.	Roorkee.	
13	Savas Lal (2).	Roorkee.	
14	Abdur Rahman.	Aligarh.	
15	Fakir Chand.	Roorkee.	
16	Karim Bakhsh.	Roorkee.	
17	Parmanand.	Roorkee.	
18	Hatim Ali.	Roorkee.	
19	Muhammad Hussain.	Delhi College.	
20	Rahmat Ali.	Delhi College.	
21	Khwaja Jan.	Bareilly College.	
22	Anand Das.	Baridpur School.	
23	Hardeo Das.	Delhi College.	
24	Sri Ram.	Roorkee.	

1857

ENGINEER CLASS

1	Malville, A. D.	Ensign, 67th N. Infantry
---	-----------------	--------------------------

LOWER SUBORDINATE CLASS.

1	Prari Lal.	Bareilly College
2	Shadi Lal.	Bareilly College.
3	Agar Ali.	Bareilly College
4	Gokind Ray.	Roorkee

1958.

No.	Name.	Rank and Corps, and where educated.	Remarks.
ENGINEER CLASS.			
1	Brockman, W. D., ..	..	.. Council of India Prize of Rs. 1,000.
2	Sindar Lal, ..	.. Bareilly College.	
UPPER SUBORDINATE CLASS.			
1	Keane, J., ..	.. Staff Sergeant, 2nd E. B. F., ..	Prize for General Merit.
2	Clarke, G., ..	.. Pte, Sappers and Miners, ..	Prize for Mathematics
3	Gilmore, J., ..	.. Private, 1st E. B. F., ..	Prize for General Merit.
4	McMillen, W., ..	.. Corp'l, Sappers and Miners.	
5	Driver, G., ..	.. Corp'l, 2nd Cy. 5th Bt. Arty.	
6	Matthews, F., ..	.. Serg't, Sappers and Miners.	
7	Joyce, J., ..	.. Corp'l, Sappers and Miners.	
8	Potter, H., ..	.. Corp'l, Sappers and Miners.	
9	Smith, T., ..	.. Tpr, 1st Tr. 3rd Br. E. Arty.	
10	Jamieson, W., ..	.. Private, Sappers and Miners.	
11	Pendergast, J., ..	.. Corp'l, Sappers and Miners.	
12	Common, G., ..	.. Private, 2nd E. B. F.	
13	Gallbreath, A. C., ..	.. Corp'l, Sappers and Miners.	Prize for Drawing
14	Porter, J., ..	.. Gunr, 4th Cy. 3rd Bt. Arty.	
15	McPherson, H. McG., ..	.. Private, 2nd E. B. F., ..	Prize for Drawing
16	Kavanagh, J. J., ..	.. Corp'l, Sappers and Miners.	
17	Tyudall, J., ..	.. Serg't, Sappers and Miners.	
18	Ryan, J., ..	.. Gr., 3rd Tr. 1st Br. H. Arty.	
19	Tracy, M., ..	.. Gr., 3rd Cy. 6th Bt. Arty.	
20	Adams, J., ..	.. Serg't, Sappers and Miners.	
21	Johnstone, M., ..	.. Corp'l, Sappers and Miners.	
22	Olestad, E., ..	.. Gr., 1st Cy. 2nd Bt. Arty.	
23	Moloney, M., ..	.. Serg't, 2nd E. B. F.	
24	Poley, J., ..	.. Br., 3rd Cy. 2nd Bt. Arty.	
25	Chill, W. R., ..	..
26	Smith, M. T., ..	..
LOWER SUBORDINATE CLASS.			
1	Hastam Beg, ..	.. Delhi College,	.. Prize for General Merit.
2	Khwaja Abdur Rahman	.. Delhi College,	.. Prizes for Surveying and Drawing.
3	Ram Gopal, ..	.. Saharanpur	
4	Nabi Ahmed, ..	.. Bareilly College.	
5	Gobind Ray, ..	.. Saharanpur.	
6	Nawab Ali, ..	.. Bareilly College.	
7	Din Dayal (1), ..	.. Roorkhee.	
8	Narayan Das, ..	.. Bareilly College,	.. Prize for Mathematics.
9	Kashaya Lal, ..	.. Bareilly College.	
10	Abdur Razzak, ..	.. Deoband	
11	Jyoti Mal, ..	.. Jawalapur.	
12	Bai Chand, ..	.. Saharanpur	
13	Leekpat Ray, ..	.. Bareilly College	
14	Hira Lal (1), ..	.. Saharanpur.	
15	Baktiwar Lal, ..	.. Saharanpur	
16	Shree Dayal Singh, ..	.. Delhi College.	
17	Alim Khan, ..	.. Roorkhee.	

1858.

No	Names	Rank and Corps, and where educated	Remarks
16	Amir Ahmad,	.. Roorkee.	
17	Jay Dayal Singh,	.. Saharanpur.	
20	Jasna Das,	.. Saharanpur.	
21	Hari Lal (S),	.. Saharanpur.	
22	Rhoda Baksh,	.. Saharanpur.	
23	Din Dayal (S),	.. Roorkee.	
24	Fazl Asim,	.. Saharanpur.	
25	Sirfaras Ahmad,	.. Delhi College.	
26	Banwari Lal,	.. Deoband.	
27	Hira Lal (S),	.. Saharanpur.	
28	Mamur Ahmad,	.. Deoband.	
29	Nasir Ahmad,	.. Deoband.	
30	Mughul Beg,	.. Delhi College.	
31	Salig Ram,	.. Bareilly College.	
32	Ganpat Ray,	.. Deoband.	
33	Behari Lal,	.. Raigarh.	
34	Bahal Singh,	.. Roorkee.	
35	Abdur Rahman,	.. Roorkee.	
36	Nathu,	.. Roorkee.	
37	Mahdi Ali,	.. Bareilly College.	

1859.

ENGINEER CLASS.

1	Beckett, W H.	..	} Higher Standard.
2	Armstrong, W. F.	..	
3	Narayan Das,	.. Bareilly College,	} Higher Standard. The Thomson Prize of Rs 250.
4	Wood, E. S.	.. Lieut., 83rd Highlanders.	
5	Speake, J. H.	..	} The Cantley Gold Medal.
6	White, H. F.	..	
7	Yule, G. W. V.	.. Woolwich	
8	Garsen, E. C.	.. Lieut., 29th N Infantry.	
9	Angelo, R. F.	.. Lieut., 41st N Infantry	
10	Ghani Ram,	.. Bareilly College	
11	Shoa Prasad,	.. Bareilly College.	

UPPER SUBORDINATE CLASS

1	Lemnox, W H.	.. Corpl., Sappers and Miners,	} Prizes for General Merit, Mathematics and Surveying.
2	Casnarion, P. C.	.. Corpl., Sappers and Miners,	
3	Hall, J.	.. Sergt., Sappers and Miners,	} Prizes for Surveying and Drawing. Prizes for General Merit and Civil Engineering.
4	Pearson, G.	.. Corpl., Sappers and Miners,	
5	Ready, P.	.. Gunr., 2nd Cy 5th Bt. Arty	} Prizes for General Merit and Civil Engineering.
6	Egan, J.	.. Pte., Sappers and Miners	
7	Gair, D.	.. School Sergeant, Peshawar Artillery Division.	
8	Hurst, J.	.. Sgt., 2nd Cy 4th Bt. Arty	

1859

No.	Names	Rank and Corps, and where educated	Remarks
9	Herdman, W. J.,	Sergt, 1st B. B. F.	
10	Armstrong, E.,	Private, 27th Regiment.	
11	Tarrant, E.,	Sergt, 80th Regiment.	
12	Beck, H.,	Sergt, 4th B. F. Regiment.	
13	Anderson, J.,	Compl. Sergt, 3d Br. Heavy	
14	Bradshaw, J.,		
LOWER SUBORDINATE CLASS			
1	Muhammad Mohan,	Ludhiana,	Prize for Drawing
2	Maitra Das (1),	Saharanpur,	Prize for General Merit
3	Chokhai Lal,	Bareilly College	
4	Maitra Das (2),	Ambhata.	
5	Faiz Azim,	Saharanpur.	
6	Ganga Ram,	Saharanpur	
7	Muhammad Hussain,	Meerut,	Prize for Surveying
8	Kishori Lal,	Ambhata	
9	Rajan Lal,	Bikaudambad	
10	Nisadar Singh,	Ambhata.	
11	Ata Hussain,	Roorkee	
12	Gundan Lal,	Meerut.	
13	Zakir Hussain,	Mandawar School	
14	Mahsar Ullah,	Roorkee	
15	Harpat Rai,	Deoband	
16	Bhagwan Das,	Deoband	
17	Yamat Ali,	Roorkee	
18	Hira Lal,	Meerut.	
19	Asiz Beg,	Bareilly College	
20	Debi Prasad,	Bareilly College	
21	Janki Das,	Gangohi	
22	Abdur Rahman,	Roorkee	
23	Janna Das,	Saharanpur	
24	Guliam Nahi,	Deoband	
25	Kundan Lal,	Deoband.	
26	Debi Das,	Bareilly College	

1860.

No.	Names	Rank and Corps, and where educated	Marks obtained	Percentage	Remarks
ENGINEER CLASS.					
(Full Marks, 2860)					
1	Maitland, G. T.,		1532	54	
2	Hennemay, W. C.,		1458	51	
3	Panona, H. J.,	Lieut, 28th N. Infantry,	1403	49	
4	Khettar Nath Chatter-				
	jee,	Agra College,	1352	44	
5	Parker, F. G. S.,	Lieut, 54th Regiment,	1214	43	
6	Muthra Das,		1082	38	
7	Ellis, W. K.,	Capt, 38th Regiment,	0798	28	

1860.

No.	Name.	Rank and Corps, and where served.	Age at entry.	Remarks.
UPPER SUBORDINATE CLASS.				
(Full Marks, 1860).				
1	Martin, W.	Corpl., 82nd Regiment.	557	Prize for General Merit.
2	Graham, D.	Corpl., Sappers and Miners.	544	Prize for Mathematics.
3	Burke, P.	Corpl., Sappers and Miners.	535	Prize for Surveying.
4	McGrath, T.	Sergant, 82nd Regiment.	532	
5	Fairson, J.	L.-Corpl., 42nd Highlanders.	793	
6	Chalmers, H.	Corpl., Sappers and Miners.	790	
7	Miller, J.	Corpl., Sappers and Miners.	784	
8	Jackson, R.	Sergt., Sappers and Miners.	768	
9	Balley, F. R.	Sergt., Sappers and Miners.	750	
10	Cansley, W.	Corpl., Sappers and Miners.	744	Prize for Drawing.
11	Weldon, J.	Sergt., 1st Cy 1st Bt. Arty.	735	
12	Kilham, J.	Corpl., Sappers and Miners.	714	
13	Hyde, W.	Corpl., Sappers and Miners.	684	
14	Smith, C.	Pte, 2nd Bengal Fusiliers.	678	
15	McArthur, G.	Sergt., 42nd Highlanders.	665	
16	Blake, P. G.	Pte, 2nd Dragoon Guards.	653	
17	Cooper, G.	Corpl., Sappers and Miners.	651	
18	Humphreys, D.	Corporal, 77th Regiment.	649	
19	Harte, T.	Corpl., Sappers and Miners.	633	
20	Burleigh, R.	Corpl., Sappers and Miners.	615	
21	Haddock, C.	Corpl., Sappers and Miners.	609	
22	Mulcahy, R.	Sergt., Sappers and Miners.	589	
23	Robinson, G.	Corpl., Sappers and Miners.	579	
24	Flynn, M.	Sergt., Ord. Comt. Dept.	545	
25	Pilkington, W.	Sergt., Sappers and Miners.	530	
26	Mahr, M.	Sergt., Sappers and Miners.	523	
27	Fish, J.	Sergt., Sappers and Miners.	468	
28	Gough, W.	Sergt., Sappers and Miners.	456	
29	Baria, S.	Corpl., Sappers and Miners.	400	
30	Hynes, T.	Sergt., Sappers and Miners.	398	
LOWER SUBORDINATE CLASS.				
(Full Marks, 1860).				
1	Fatah Chand,	Ambahita,	798	Prizes for General Merit, Surveying and Drawing.
2	Mangut Ray,	Manglaur,	783	Prize for General Merit.
3	Rup Chand,	Ferozpur,	655	
4	Abul Hasan,	Dalhi College,	637	
5	Manna Lal,	Sikandarabad,	612	
6	Ali Muhammad,	Bareilly College,	610	
7	Nand Kishore,	Deoband,	593	
8	Sahk Ali,	Dalhi College,	591	
9	Shayst Ali,	Manglaur,	569	
10	Daulat Ram,	Sikandarabad,	567	
11	Nadha Ram,	Kul,	544	
12	Brimha Saray,	Sikandarabad,	539	
13	Muthra Das,	Deoband,	531	
14	Ali Hasan,	Baharampur,	549	

1860

No.	Name.	Rank and Corps, and where employed.	Mark in English	Mark in Arabic	Remarks.
17	Shola Nath (1),	.. Bareilly College,	..	543 40	
18	Mosaffar Hussain,	.. Delhi College,	..	534 40	
20	Nur Singh,	.. Deoband,	..	522 38	
27	Ram Saray,	.. Sikandarabad,	..	481 36	
29	Shangam Lal,	.. Umballa,	..	474 35	
30	Bhagwan Das,	.. Deoband,	..	472 35	
31	Kanhaya Lal,	.. Roorkee,	..	470 35	
32	Jhanda Singh,	.. Manglaur,	..	463 35	
34	Yusuf Ali,	.. Roorkee,	..	463 34	
35	Fauz Ali,	.. Delhi College,	..	460 34	
36	Muhammad Ismail,	.. Manglaur,	..	461 33	
40	Genda Singh,	.. Manglaur,	..	440 33	
41	Choto Lal,	.. Meerut,	..	435 32	

1861.

ENGINEER CLASS.

(Full Marks, 2275).

1	Wachery, W. H.	.. Capt., 79th Highlanders.	1754 61	Higher Standard
2	Williams, F. J.	..	1575 55	The Council of India Prize of Rs 1,000 Prize for Physical Science.
3	Gibbs, G. R.	.. Lieut., 20th Regiment.		
4	Delafosse, C. E.	.. Lieut., Artillery.		

UPPER SUBORDINATE CLASS.

(Full Marks, 1875).

1	Gill, W.	.. Private, 42nd Highlanders.	1102 70	Higher Standard
2	Webster, J.	.. Private, 80th Regiment.	869 69	Prize for Drawing.
3	Heyward, T.	.. Corpl., Sappers and Miners.	867 61	Higher Standard
4	Halseell, J.	.. Corpl., Sappers and Miners.	824 59	Prize for General Mensuration and Surveying.
5	O'Malley, J.	.. Sergt., Sappers and Miners.	870 56	
6	Lindsay, R. B.	.. Corpl., Sappers and Miners.	825 52	
7	Adam, R.	..	754 48	Higher Standard.
8	Beonette, T.	.. Corpl., Sappers and Miners.	749 48	
9	McCarthy, D.	.. Private, 20th Lt. Dragoons.	719 46	
10	Browning, T.	.. Private, 7th Hussars.	719 46	
11	Williams, J.	.. Sergt., 101st R. B. Fusiliers.	646 41	
12	Lindsay, C., aka Sub- ton, C. P.	.. Corpl., Sappers and Miners.	644 41	
13	Craven, W.	.. Corpl., Sappers and Miners.	641 41	
14	Tej Ray,	..	610 39	
15	Granville, H.	.. Corpl., Sappers and Miners.	590 37	
16	Gorman, W.	.. Private, 57th Regiment.	582 35	
17	Morrison, J.	.. Private, 20th Lt. Dragoons.	494 31	
18	Behari Lal Chatterjee,	..	470 30	

1861

No.	Name.	Rank and Corps, and where educated.	Marks obtained.	Remarks.
LOWER SUBORDINATE CLASS.				
(Full Marks, 1400).				
1	Afzal Shah,	.. Gurgaon,	751 51	Higher Standard. Prize for General Merit.
2	Shadi Lal,	.. Sikandarabad,	729 49	Higher Standard. Prize for Drawing.
3	Saugan Chand,	.. Manglaur,	707 48	
4	Dasani Ram,	.. Najibabad,	686 46	
5	Lochan Prasad,	.. Shongar,	680 46	
6	Lechan Prasad,	.. Moradabad,	678 46	Prize for Mathematics.
7	Ganesh Lal,	.. Gangoh,	668 45	Prize for Civil Engineering.
8	Ali Nabi,	.. Nagina,	651 44	
9	Karim Mal,	.. Manglaur,	613 43	
10	Ishtam Ali,	.. Ambala,	604 41	
11	Shib Sahay,	.. Bareilly College,	604 41	
12	Fauz-ud-din,	.. Meerut,	599 40	Prize for Surveying.
13	Sowak Ram,	.. Manglaur,	565 39	
14	Ramji Das,	.. Jalaabad,	563 38	
15	Niaz Ahmad,	.. Delhi,	549 37	
16	Ram-ud-din,	.. Deoband,	532 36	
17	Kalyan Das,	.. Sadabad,	512 34	
18	Bhola Nath,	.. Sikandarabad,	508 34	
19	Har Sarup,	.. Manglaur,	499 34	
20	Nasir Hussain,	.. Manglaur,	474 32	
21	Rant Lal,	.. Manglaur,	468 32	
22	Bhawani Dutt,	.. Gangoh,	463 31	
23	Aziz-ud-din,	.. Delhi College,	463 31	
24	Har Prasad,	.. Mda,	440 30	
25	Nasir Hussain,	.. Manglaur,	430 29	
26	Karm Ahmad,	.. Delhi College,	423 28	
27	Ragnandan Lal,	.. Sikandarabad,	418 28	
28	Bart Mal,	.. Roorkee,	331 23	

1862.

ENGINEER CLASS				
(Full Marks, 2000)				
1	William, W. H.,	.. Lieut. Royal Artillery,	1628 58	Higher Standard. Prize for Physical Science.
2	Isaac Chander Sircar,	..	1143 39	
3	Kalherer, F.,	..	1054 30	
4	Ushan Lal,	..	1036 28	
5	Conner, A. S. W.,	..	1016 28	
6	Armstrong, L. H. C.,	..	974 34	
7	Pope, J. E.,	..	970 33	
8	Ogle, M. J.,	..	787 26	
9	Pennock, L.,	..	757 26	

1862.

No	Names	Rank and Corps, and where situated	Marks gained	Percent	Remarks
UPPER SUBORDINATE CLASS					
(Full Marks, 1875)					
1	Quibart, J.	.. Corpl., Sappers and Miners.	1166	74	Higher Standard. Prizes for General Merit and Mathematics.
2	Lawson, A.	.. Corpl., Sappers and Miners.	1082	66	Higher Standard. Prize for Drawing
3	Mills, J.	.. Corpl., Sappers and Miners.	918	58	Higher Standard
4	Hill, L. G.	.. Corpl., 38th Regiment.	912	56	Prizes for Civil Engineering and Surveying.
5	Street, W.	.. Corpl., Sappers and Miners.	892	57	
6	Wray, R.	.. Gunner, Royal Artillery.	867	55	
7	Jennings, T.	.. Private, 7th Hussars.	852	53	Higher Standard.
8	Forayth, A.	.. Sgt & Coy Room Clerk, R.A.	792	50	
9	Bartram, J.	.. Corpl., Sappers and Miners.	752	46	
10	Wilson, J.	.. Private, 35th Regiment.	746	47	
11	Jones, R.	.. Corpl., Sappers and Miners.	739	47	
12	Paul, J.	.. Private, 79th Highlanders.	644	41	
13	Walkinshaw, R.	.. Corpl., Sappers and Miners.	641	41	
14	Hinsey, H.	.. ..	627	40	
15	Goldbeck, J.	.. Private, 7th Hussars.	618	39	
16	Bunn, J.	.. Private, 84th Regiment.	604	38	
17	Walshe, S. G.	.. Sergeant, 7th Hussars.	588	37	
18	Robinson, W.	.. Gunner, Royal Horse Art.	568	36	
19	Tej Hay.	.. ..	536	33	
20	McCawley, J.	.. Private, 20th Regiment.	546	35	
21	Ryan, P.	.. Sergeant, 91st Regiment.	544	35	
22	Redmond, J.	.. ..	537	34	
23	Browne, E.	.. Corpl., Sappers and Miners.	504	32	
24	Goss, A.	.. 71st Regiment.	503	32	
25	Dwyer, J.	.. Sergeant, 52nd Regiment.	499	32	
26	Jamna Prasad.	.. ..	495	31	
27	Kidarnath Tripathi.	.. ..	488	31	
28	Ram Prasad.	.. ..	486	31	
29	Mohan Lal.	.. ..	312	30	
30	Hari Das Dey.	.. ..	302	19	
LOWER SUBORDINATE CLASS					
(Full Marks, 1800)					
1	Bhagwan Sahay.	.. Bahadurshahr.	841	56	Higher Standard. Prize for Drawing
2	Muhammad Zakaria.	.. Bahadurshahr.	788	53	Higher Standard. Prize for Surveying.
3	Khatim Ali.	.. Nagina.	753	51	Prize for Mathematics.
4	Ali-ud-din.	.. Bahadurshahr.	725	48	
5	Ahmad Hasan.	.. Nagina.	707	47	Prize for Civil Engineering.
6	Kundan Lal.	.. Deoband.	663	44	
7	Nisar Ali.	.. Delhi.	650	42	
8	Mohi Dhar.	.. Gangoh.	600	40	
9	Ahmad Husain.	.. Nagina.	590	40	

1862.

No.	Name.	Rank and Corps, and where adopted.	Marks gained.	Percent.	Remarks.
10	Ali Mahomed,	.. Meradabad,	..	530/40	
11	Bhagwan Das,	.. Manglaur,	..	534/59	
12	Isdyat Ullah,	.. Nagina,	..	544/56	
13	Behet Singh,	.. Nagina,	..	544/56	
14	Mohammed Ragan,	.. Bahraunpur,	..	545/56	
15	Munir Chaud,	.. Gangoh,	..	526/55	
16	Shib Lal,	.. Deoband,	..	519/55	
17	Chanchal Ray,	.. Bahraunpur,	..	490/53	

1863.

ENGINEER CLASS.

(Full Marks, 2750).

1	Lempelt, C. B.,	.. Church Missionary School, Idington,	1844/37	Higher Standard Council of India Prize of Rs. 1,000, Cantley Gold Medal Col Medley's Prize for Civil Engineering
2	Sambella, E. W.,	.. Lieut. Genl. Inst. Infantry,	1601/58	Prize for Geology.
3	Conroy, W. F.,	.. St George's, Mussoorie,	1872/46	
4	Bell, A. C.,	.. St. George's, Mussoorie,	1126/41	
5	Jackson, G. d'A.,	.. Lieut. Genl. Inst. Cavalry,	1120/41	

UPPER SUBORDINATE CLASS.

(Full Marks, 1600).

1	Graham, W.,	.. Sergt., Sappers and Miners,	1418/39	Higher Standard. Prizes for General Merit, Mathematics and Civil Engineering
2	Marshall, E.,	.. Gunr., B-S, Royal Artillery,	1086/68	Prizes for Surveying and Drawing
3	Bard, H.,	.. Private, Sappers and Miners,	1064/68	Higher Standard Extra Prize for Civil Engineering
4	Newland, J.,	.. Private, Sappers and Miners,	1068/67	Extra Prize for Drawing.
5	Collogher, G.,	.. Sergeant, 77th Regiment,	1029/64	} Higher Standard.
6	Robertson, J.,	.. Private, Sappers and Miners,	1006/63	
7	Schofield, C.,	.. Private, 7th Hussars,	997/63	
8	Scott, W.,	.. Private, Sappers and Miners,	968/60	Higher Standard.
9	Freeman, A.,	.. Private, 80th Regiment,	948/59	
10	Bourne, W.,	.. Corporal, Sappers and Miners,	880/54	
11	McKewen, J.,	.. Private, Sappers and Miners,	824/52	
12	Chisholm, C.,	.. Private, 93rd Highlanders,	807/50	
13	LeMaistre, E.,	.. ..	797/50	
14	Allen, G.,	.. Private, Sappers and Miners,	750/47	
15	Buchanan, A.,	.. Sergeant, 91st Regiment,	747/47	
16	Dallas, D.,	.. Corporal, Sappers and Miners,	735/46	
17	Scott, A.,	.. Corporal, 54th Regiment,	712/45	
18	McEwen, J.,	.. Private, 7th Hussars,	706/44	
19	Parrott, J.,	.. Private, 85th Regiment,	689/43	
20	Alisdale, W.,	.. Private, Sappers and Miners,	640/40	

1963.

No.	Name.	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.
21	Smith, T W,	.. Gunner, 5-19, Royal Arty.,	683	40	
22	Furlong, W.,	.. Private, 86th Regiment, ..	529	33	
23	Morris, P.,	.. Private, Sappers and Miners,	505	33	
24	Howe, B.,	.. Corpl, Sappers and Miners,	495	31	
25	Boyd, T.,	.. Private, 7th Hussars, ..	494	31	
26	Lyons, H.,	.. Corpl, 81st Regiment,	489	29	
27	Molnah, B.,	.. Private, 84th Regiment, ..	441	26	

LOWER SUBORDINATE CLASS.

(Full Marks, 1480)

1	Ali Muhammad,	.. Moradabad,	1049	72	Higher Standard. Prizes for General Merit and Drawing
2	Balmokand,	.. Sikandarabad,	906	67	Higher Standard Prizes for Civil Engineering.
3	Saidar Hussain,	.. Musaffarhagar,	902	63	
4	Pyari Lal,	.. Sikandarabad,	772	52	
5	Mardan Ali,	.. Bijnor,	769	52	
6	Abdur Rasak,	.. Bulandshahr,	762	52	
7	Baldeo Prasad,	.. Najibabad,	754	59	Prize for Mathematics.
8	Rafi-ud-din,	.. Amroha,	726	50	
9	Gunpat Ray,	.. Khandua,	708	49	
10	Ali Ahmad,	.. Saharanpur,	687	47	
11	Gokal Prasad,	.. Moradabad,	674	46	
12	Panna Lal,	.. Deoband,	646	45	
13	Dalai Ray,	.. Umballa,	626	43	
14	Budh Parkash,	.. Bulandshahr,	599	41	
15	Abdur Rahman,	.. Deoband,	575	40	
16	Ramanand,	.. Meerut,	561	39	
17	Maman Ali,	.. Agra,	561	39	
18	Purnesh Lal,	.. Bulandshahr,	559	39	
19	Muhammad Azim,	.. Umballa,	549	38	
20	Tek Chand,	.. Bijnor,	532	37	
21	Chitami Lal,	.. Bijnor,	520	36	
22	Chajid Singh,	.. Meerut,	515	35	
23	Rahmat-ullah,	.. Moradabad,	503	35	
24	Nagha Singh,	.. Deoband,	499	34	
25	Gulab Singh,	.. Meerut,	493	34	
26	Genesh Lal,	.. Monghyr,	406	28	

1864

ENGINEER CLASS

(Full Marks, 2280)

1	Sibbold, E A,	.. Mr. Lewin's, Mussoorie,	1915	67	Higher Standard. Council of India Prize of Rs. 1,000 Cantley Gold Medal
2	Brown, F. D. M., V C,	.. Lieut., 101st Regiment,	1789	63	Higher Standard. Col Medley's Prize for Civil Engineering

1884.

No.	Name.	Rank and Corps, and where educated.	Age at entry.	Remarks.
2	Downing, A. E.,	.. Lieut., 8th Native Infantry,	1792 68	Higher Standard.
4	Shepherd, C. E.,	.. Lieut., Genl. List, Infantry,	1746 61	
5	Farrie, W.,	.. Lt. Martinère, Lucknow, ..	1715 80	
6	Sandeman, J. E.,	.. Lieut., Genl. List, Infantry,	1588 53	
7	Fenn, J. H.,	.. Mr. Maddock's, Mansoorah,	1554 58	
8	Wright, W. C.,	.. Mr. Maddock's, Mansoorah,	1538 54	
9	MacDowell, G. R.,	.. Lt. Martinère, Lucknow, ..	1515 53	
UPPER SUBORDINATE CLASS.				
(Full Marks, 1800).				
1	Stuart, D.,	.. Gunner, 1-25, Royal Arty.,	1402 88	Higher Standard. Prizes for General Merit, Mathematics and Surveying.
2	McCarthy, E.,	.. Gunner, F-16, Royal Arty.,	1340 84	Higher Standard
3	Patterson, J.,	.. Private, 79th Highlanders,	1270 79	Higher Standard Prizes for Civil Engineering.
4	Fearce, G.,	.. Pte, 2nd Bn., Rifle Brigade,	1192 75	Higher Standard
5	Dunlop, R.,	.. Lieut.-Sergt., 54th Regiment,	1169 73	Prizes for Drawing.
6	Porter, J. O.,	.. Corporal, 21st Hussars, ..	1154 72	
7	Southon, J.,	.. Gunner, D-22, Royal Arty.,	1114 70	
8	Telford, F. H.,	.. Private, Bappers and Miners,	1050 66	
9	Ryan, T.,	.. Pte, 3rd Bn., Rifle Brigade,	1006 63	
10	Thompson, H.,	.. Corporal, G-22, Royal Arty.,	1004 63	
11	Reed, W. H.,	.. Gunner, D-22, Royal Arty.,	989 60	
12	Kennedy, J.,	.. Lieut.-Sergt., 56th Regiment,	808 61	
13	Wade, G. F.,	.. ..	778 49	
14	Phillips, J.,	.. ..	774 48	
15	Munro, G.,	.. Gunner, A-23, Royal Arty.,	772 48	
16	Hughes, H.,	.. Private, 42nd Regiment, ..	747 47	
17	Tennant, E. J.,	.. Private, Bappers and Miners,	738 46	
18	McLean, J.,	.. Lieut.-Corpl., 42nd Regiment,	708 44	
19	Belcher, T.,	.. Gunner, E-24, Royal Arty.,	690 44	
LOWER SUBORDINATE CLASS.				
(Full Marks, 1800).				
1	Sohas, Lal,	.. Bujor,	1170 78	Higher Standard Prizes for General Merit, Mathematics, Civil Engineering, Survey- ing and Drawing.
2	Natthā Rān,	.. Sikandarabad,	1083 67	Higher Standard.
3	Durga Prasad,	.. Naphabad,	828 64	
4	Khōswakt Ray,	.. Naktar,	942 62	
5	Fakir Chand,	.. Bulandshahr,	894 60	
6	Ganga Sahay,	.. Bujor,	808 54	
7	Bhōri Shankar,	.. Sikandarabad,	738 49	
8	Yakub Ali,	.. Delhi,	737 49	
9	Kanhuja Lal,	.. Moradabad,	691 46	
10	Chandun Lal,	.. Sikandarabad,	610 41	
11	Ali Hussain,	.. Bulandshahr,	619 38	

1893.

No.	Name.	Rank and Corps, and where educated.	Mark	Percent	Remarks.
ENGINEER CLASS.					
<i>(Full Marks, 3000).</i>					
1	Dodsworth, G. W., ..	Saint George's, Muscovia,	1855	63	<i>Higher Standard.</i> Counsel of India Prize of Rs. 1,000 Col Medley's Prize for Civil Engineering.
2	Johnson, W. H., ..	La Martinère, Lucknow, ..	1835	53	Col Macdagan's Prize for Physical Science.
3	Wavell, L., ..	Laurent, 22nd N. Infantry, ..	1874	52	
4	Ross, F. E., ..	Mr. Lewin's, Muscovia, ..	1448	48	
5	Mont, H. L., ..	Mr. Lewin's, Muscovia, ..	1406	47	
6	Cumson, G., ..	La Martinère, Lucknow, ..	1173	39	
UPPER SUBORDINATE CLASS.					
<i>(Full Marks, 1800).</i>					
1	Flynn, W. J., ..	Sergeant, 21st Hussars, ..	1250	76	<i>Higher Standard.</i> Prizes for General Merit, Civil Engineering and Surveying.
2	Turner, J., ..	Gunner, E-C, R. H. Arty.,	1217	74	<i>Higher Standard.</i> Extra Prize.
3	Kerr, C., ..	Lance-Corporal, 51st Regt.,	1193	72	<i>Higher Standard.</i> Prizes for Mathematics.
4	Tait, W., ..	Corpl, Sappers and Miners,	1139	69	<i>Higher Standard.</i>
5	Kates, W., ..	Driver, F-C, R. H. Arty.,	1137	69	
6	Downes, J., ..	Private, 27th Regiment, ..	1133	69	
7	Henry, A., ..	Loc. Cpl, 79th Highlanders,	1118	63	
8	Lee, G. C., ..	Private, 34th Regiment, ..	1078	65	
9	McKenzie, F., ..	Private, 30th Regiment, ..	1074	65	
10	Howe, C., ..	Gunner, 3-24, Royal Arty.,	1055	64	
11	Bushanan, G., ..	Corpl, Sappers and Miners,	1026	62	Prize for Drawing.
12	Munro, J., ..	Corpl, 4-25, Royal Artillery,	997	60	Prize for Chemistry
13	Walsh, K. R., ..	Pte, 1st Bata, 7th Fusiliers,	995	60	
14	Sullivan, R., ..	Private, 21st Hussars, ..	956	58	
15	Johnson, J., ..	Pte, 1st Bata, 7th Fusiliers,	929	56	
16	McGregor, C., ..	Private, 42nd Regiment, ..	896	54	
17	Herbert, J., ..	Private, 101st Regiment, ..	887	54	
18	Wickens, O., ..	Bombr, B-11, Royal Arty.,	872	53	
19	Cunningham, C., ..	Bombr, F-10, Royal Arty.,	847	51	
20	Comma, W., ..	Lance-Corpl, 45th Regt.,	825	50	
21	Carroll, J., ..	Gunner, E-10, Royal Arty.,	818	50	
22	Pearson, W., ..	Private, 54th Regiment, ..	817	50	
23	Mollindine, J., ..	Pte, Sappers and Miners,	711	43	
24	Murphy, J., ..	Corpl, Sappers and Miners,	678	41	
25	Leahy, T., ..	Lance-Corpl, 21st Hussars, ..	672	41	
26	Rutledge, J., ..	Corpl, 51st Regiment, ..	655	40	
27	Charles, J., ..	Br-Tpzt, C.O, R.H. Arty.,	635	38	
Second Class.					
1	Newman, O. B., ..	Corpl, Royal Engineers, ..	1235	78	<i>Higher Standard.</i> Special Prize given by the College.

1885

No.	Names.	Rank and Corps, and where educated.	Mark obtained	Remarks.
2	Egan, H.	.. Corpl, Royal Engineers, ..	1117 68	Higher Standard Special Prize given by the Principal.
3	Tate, A.	.. Corpl, Royal Engineers, ..	1008 61	Higher Standard Special Prize given by the Asst. Principal.
4	Walker, R.	.. Corpl, Royal Engineers, ..	974 59	Prize for Drawing
5	Mill, W. H.	.. Sergt, Royal Engineers, ..	901 56	
6	Imrie, D. B.	.. Corpl, Royal Engineers, ..	882 54	
7	Lemon, E.	.. Corpl, Royal Engineers, ..	884 54	
8	Miller, E.	.. Corpl, Royal Engineers, ..	827 50	
9	Dadson, A.	.. Sapper, Royal Engineers, ..	830 50	
10	Troup, J.	.. Corpl, Royal Engineers, ..	831 50	
11	Treadaway, G.	.. Corpl, Royal Engineers, ..	812 49	
12	Alger, A.	.. Sapper, Royal Engineers, ..	799 48	
13	Tait, W. R.	.. Sapper, Royal Engineers, ..	794 48	
14	Kelly, J.	.. Corpl, Royal Engineers, ..	784 48	
15	Cockburn, J.	.. Corpl, Royal Engineers, ..	763 46	
16	Jameson, W.	.. Sapper, Royal Engineers, ..	716 43	
17	Seaward, M.	.. Sapper, Royal Engineers, ..	709 43	
18	Fraser, J.	.. Sapper, Royal Engineers, ..		
19	McAllister, R.	.. Sapper, Royal Engineers, ..		
20	Lane, W. M.	.. Sapper, Royal Engineers, ..		
21	Murphy, W.	.. Sapper, Royal Engineers, ..		
22	Murphy, J.	.. Corpl, Sappers and Miners, ..	765 47	
23	Jones, W.	.. Corpl, A-16, R. Artillery, ..	742 45	
24	Davis, J.	.. Private, 1st Bn., 15th Regt.	728 44	
LOWER SUBORDINATE CLASS.				
(Full Marks, 1550).				
1	Tajammol Hosain, ..	Deoband, ..	1202 78	Higher Standard Prizes for General Math, Civil Engineering, Surveying and Drawing
2	Bri Prasad,	.. Bolandshahr,	1190 77	Higher Standard Prizes for Mathematics and Drawing.
3	Thakur Das,	.. Jagdishri,	1098 70	
4	Het Ram,	.. Bijnor,	1088 68	
5	Jaggamith,	.. Deoband,	1028 65	
6	Dhanna Lal,	.. Ambatta,	1021 60	
7	Kundan Lal,	.. Deoband,	989 64	
8	Muhammed Nowaj,	.. Saharanpur,	985 64	
9	Shams-ud-din,	.. Moradabad,	959 62	
10	Abdall Beg,	.. Bolandshahr,	952 61	
11	Narayan Das,	.. Jagdishri,	952 61	
12	Sharif Ali,	.. Amroha,	906 58	
13	Bhagirat Das,	.. Sikandarabad,	886 58	
14	Amirat Ali,	.. Faari,	858 55	
15	Parmanand,	.. Jagdishri,	849 53	
16	Sabbi-ud-din,	.. Nagina,	794 51	
17	Gopal Singh,	.. Nagina,	785 48	
18	Amir-ud-din,	.. Sikandarabad,	722 47	
19	Gobind Prasad,	.. Nagina,	681 44	
20	Ram Das,	.. Sikandarabad,	680 44	

1865

No	Names	Rank and Corps, and where educated	Marks obtained	Percent	Remarks
21	Aladya, ..	Sahāranpur, ..	678	34	
22	Gār Dayāl Singh, ..	Sahāranpur, ..	674	48	
23	Gulabg Ali, ..	Bulandshahr, ..	681	41	
24	Muhammed Nadir, ..	Sahāranpur, ..	608	39	
25	Chaya Singh, ..	Deoband, ..	524	34	
Minor Class					
(Full Marks, 350)					
1	Mohdab Singh, ..	Mason, ..	247	71	} Passed as Head Artificers
2	Shiba Singh, ..	Carpenter, ..	248	71	

1866

ENGINEER CLASS						
(Full Marks, 2050).						
1	Wither, A. C.,	..	Lesut, Genl. List, Infantry,	2109	71	} Higher Standard Government Prize of Rs. 1,000 Thomson and Cantley Gold Medal. Colonel MacLagan's Prize for Physical Science Col Medley's Prize for Civil Engineering
2	Smart, W.,	..	La Martinière, Lucknow,	1555	53	
3	Smart, J.,	..	La Martinière, Lucknow,	1481	50	
4	Tresham, J.,	..	Mr Maddock's, Mussoorie,	1425	48	
5	Barker, W.,	..	La Martinière, Lucknow,	1325	45	
6	Thomson, D.,	..	Major, Royal Artillery,	1306	44	
7	Hall, F. T.,	..	England,	978	38	
UPPER SUBORDINATE CLASS						
(Full Marks, 1600)						
1	Fullwood, S.,	..	Private, 89th Regiment,	1285	80	} Higher Standard Prizes for General Merit, Mathematics and Civil Engineering
2	Clifton, H.,	..	Private, 2-12th Regiment,	1257	70	
3	Phillips, W.,	..	Qr-Mr Sgt., F-16, R. Arty,	1221	78	
4	Hogan, P.,	..	Gunner, 3-24, Royal Arty,	1149	71	} Higher Standard
5	Kennedy, J.,	..	Pte, Sappers and Miners,	1118	70	
6	Williams, B.,	..	Corpl, 6-22, Royal Arty,	1094	68	
7	Nelson, J.,	..	Private, 1-20th Regiment,	1068	67	
8	Hackett, A.,	..	Corpl, Sappers and Miners,	1061	66	
9	Chapman, J.,	..	Driver, F-C, R II Arty,	1043	66	
10	Cardwell, O.,	..	Private, 21st Hussars,	1047	65	
11	Allen, J.,	..	Private, 5th Lancers,	1000	63	} Prize for Physical Science
12	Grooming, T.,	..	Bomber, 4-25, Royal Arty,	997	62	
13	Chad, J.,	..	Private, 2-12th Regiment,	986	62	

1868.

No.	Name.	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.
14	Sinclair, W.	... Sapper, Royal Engineers,	855	60	
15	Willing, J.	... Private, 21st Hussars,	845	58	
16	Beady, K.	... Private, 2-12th Regiment,	843	58	
17	Jamies, L. H.	... Sergeant, B-15, R. Arty.	836	58	
17	O'Reilly, W.	... Private, 2-12th Regiment,	835	58	
19	Pear, S.	... Sergeant, Unattached List,	816	57	
20	Kristo Chandler,	... "	814	57	
21	Fennell, G.	... Gunner, 3-34, Royal Arty.,	811	57	
22	Ferrar, W.	... Gunner, F-11, Royal Arty.,	809	56	
23	Raghub, T.	... Private, 19th Hussars,	817	51	
24	Hari Chand,	... "	813	51	
25	Douglas, J.	... "	790	49	
26	Mulvihill, M.	... Sapper, Royal Engineers,	774	49	
27	Anahutnah Singh,	... "	759	48	
28	McDermott, A.	... Private, 94th Regiment,	758	47	
29	Sinclair, W. E.	... Sapper, Royal Engineers,	755	47	
30	Tighe, J.	... Private, 28th Regiment,	743	46	
31	Wrenn, F.	... Private, 2-12th Regiment,	741	46	
32	Pendell, J.	... Private, 28th Regiment,	739	46	
33	Bahall Ram,	... "	698	44	
34	Hunter, J.	... Sergt, Unattached List,	683	43	
35	Fraser, S.	... Private, 42nd Regiment,	683	43	
36	Gray, T.	... Private, 19th Hussars,	649	41	
37	Burke, H.	... Corporal, Sappers and Miners,	645	40	
38	Woods, C.	... Gunner, O C, R H. Arty.,	633	40	
39	Edwards, J.	... Corp., 21st Hussars,	608	39	
40	Kennedy, J.	... Private, 46th Regiment,	468	30	
41	Severin, W.	... Private, 104th Regiment,	463	30	
42	Reynolds, T.	... Gunr, B-F, R H. Arty.,	340	31	
43	Gillies, H.	... Private, 27th Regiment,	361	18	
LOWER SUBORDINATE CLASS.					
(Full Marks, 1850).					
1	Abdul Ganf,	... Bareilly College,	1307	64	Higher Standard Prizes for General Merit, Civil Engineering and Drawing. Higher Standard Prize for Surveying.
2	Din Dayal,	... Sardhana,	1317	70	
3	Shagwin Das,	... Sikandarabad,	1123	73	
4	Dewan Singh (1),	... Sikandarabad,	1117	73	Prize for Mathematics.
5	Kandan Lal,	... Ambahata,	1068	71	
6	Radha Kishan,	... Anupahar,	1054	68	
7	Himsyat Ali,	... Sikandarabad,	1004	65	
8	Ali-ud-din,	... Amroha,	974	63	
9	Ram Dayal,	... Balanahar,	968	62	
10	Jhandu Mal,	... Gangoh,	964	60	
11	Shib Bahay,	... Saharanpur,	928	60	
12	Dewan Singh (2),	... Nuhur,	900	56	
13	Dina Mal,	... Sardhana,	891	57	
14	Raja Ram,	... Ambahata,	864	54	
15	Chand Lal,	... Khafra,	842	55	
16	Gandan Lal,	... Bijnor,	839	54	

1866.

No.	Name.	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.
17	Bansi Dhar,	.. Ambahia,	..	819/53	
18	Aladiya,	.. Ambahia,	..	805/53	
19	Kalyan Ray,	.. Moradabad,	..	801/53	
20	Mam Lal,	.. Meerut,	..	794/51	
21	Ramjan,	.. Sikandarabad,	..	794/51	
22	Dipkma Sarop,	.. Sikandarabad,	..	754/49	
23	Mari Dhar,	.. Sikandarabad,	..	713/45	
24	Mashak Ali,	.. Bulandshahr,	..	694/45	

Music Class

(Full Marks, 250).

1	Bedam Singh,	.. Carpenter,	..	180/51	} Passed as Head Artificer.
2	Dil Baksh,	.. Mason,	..	210/50	
3	Jayaksh,	.. Mason,	..	188/54	

1867.

ENGINEER CLASS.

(Full Marks, 3000).

1	Nelson, P,	.. La Martinière, Lucknow, ..	2416/61	Higher Standard. Council of India Prize of Rs. 1,000. Cambrey Gold Medal. Col Maclean's Prize for Physical Science. Col Medley's Prize for Civil Engineering.
2	Gordon, R,	.. Lieut, 33rd Highlanders, ..	2141/71	Higher Standard. Government Prize of Rs. 1000.
3	Lallington, W. S., M.A.	.. Lieut, 7th Hussars, ..	2112/70	Higher Standard. Government Prize of Rs. 1,000. Thomson Gold Medal.
4	Bird, G,	.. La Martinière, Lucknow, ..	1930/64	Higher Standard.
5	Landon, A.,	.. Lieut., Genl. List, ..	1479/49	

UPPER SUBORDINATE CLASS.

(Full Marks, 1000).

1	Wismann, W,	.. Corp., Royal Engineers, ..	1241/76	Higher Standard. Prize for General Merit and Drawing.
2	Ainsworth, J.,	.. Sergt, Sappers and Miners,	1237/77	Higher Standard. Prize for Civil Engineering.
3	Drown, J.,	.. Gunner, B-24, Royal Arty,	1235/77	Higher Standard.
4	Brank, C,	.. Gunter, G-15, Royal Arty,	1128/70	Higher Standard. Extra Prize for Physical Science.
5	Hairley, J. H.,	.. Private, 94th Regiment, ..	1097/69	Higher Standard. Prize for Surveying.
6	Bedford, R.,	.. Gunner, D-A, R. H. Arty,	1098/66	} Higher Standard.
7	Grant, S. W.,	.. Gunner, G-15, Royal Arty,	1076/67	
8	Ramell, J.,	.. Private, 77th Regiment, ..	1061/66	

1887

No.	Name.	Rank and Corps, and where educated.	Marks gained.	Remarks.	
9	Atkinson, C.	.. Sergt., Barrack Department.	1019/84	<i>Higher Standard.</i>	
10	Follock, J.	.. Corporal, 23rd Regiment.	1014/83		
11	Phelan, T.	.. Color-Sergt., 77th Regt.	1000/58	Prize for Mathematics	
12	Lemala, J.	.. Lee-Cpl., 52nd Highlanders.	992/52		
13	Morgan, H.	.. Private, 19th Hussars.	978/61		
14	Blackwell, J.	.. Corpl., Sappers and Miners.	960/60		
15	Gearing, H.	.. Gunner, G. G.'s Band.	889/59		
16	Brady, G.	.. Sergeant, 36th Regiment.	880/58		
17	Malloy, F.	.. Private, 31st Hussars.	818/57		
18	Smith, H.	.. Private, 31st Regiment.	909/57		
19	Worth, J.	.. Corporal, Royal Engineers.	886/58		
19	Moylan, W.	.. Sapper, Royal Engineers.	886/58		
21	Daly, D.	.. Gr., D.A., R. H. Artillery.	888/56	Prize for Mathematics	
22	Groves, J.	.. Drummer, 1-11th Regiment.	887/55		
23	Headly, T.	.. Corpl., Sappers and Miners.	884/55		
24	Hamilton, H.	.. Gunner, 5-25, Royal Arty.	879/55		
24	Jwala Sahay,	..	879/55		
26	Forns, J.	.. Gunner, 5-25, Royal Arty.	878/55		
27	Jackson, A.	.. Private, 31st Hussars.	870/55		
28	Gardner, J.	.. Corporal, Royal Engineers.	871/54		
29	Cook, E.	.. Sergt., 3rd Bn., Rifle Brigade.	867/54		
30	Gulab Singh,	..	865/54		
31	Clarke, J.	.. Lee-C., 3rd Bn., Rifle Bde.	848/53		
32	Reid, W.	.. Private, 36th Regiment.	847/53		
33	Tobin, W. T.	.. Sergeant, 5-23, Royal Arty.	837/53		
34	Baldo Prasad,	..	833/52		
35	Lyons, J.	..	778/49		
36	McCallum, W.	.. Lee-Sergt., 1-11th Regt.	765/48		
37	Behari Lal,	..	750/47		
38	McCarty, J.	.. Private, 38th Regiment.	238/15		
LOWER SUBORDINATE CLASS.					
(Full Marks, 1550).					
1	Ramji Lal,	.. Barant,	1192/77	<i>Higher Standard. Prizes for General Merit, Civil Engineering, Surveying and Drawing</i>	
2	Rahim Bakhsh (1),	.. Sahstranpur,	1065/69		
3	Ramji Das,	.. Sikandarabad,	1060/68	<i>Higher Standard. Prize for Mathematics.</i>	
4	Ahrar Hussan,	.. Amroha,	982/63		
5	Hasim Ali,	.. Bulandshahr,	978/63	<i>Higher Standard.</i>	
6	Abdul Kiam,	.. Garhmuktesar,	975/62		
7	Hayes Ray,	.. Bulandshahr,	967/62		
8	Muhammad Hussan,	.. Naktar,	947/61		
9	Narayan Das,	.. Bulandshahr,	939/60		
10	Girdhari Lal,	.. Jahangirabad,	936/60		
11	Maggan Lal,	.. Sikandarabad,	912/59		
12	Munshik Ahmad,	.. Ambala,	908/58		
13	Abdus Shukur,	.. Nagina,	885/58	<i>Higher Standard.</i>	
14	Maschar Lal,	.. Deoband,	857/56		
15	Janki Das,	.. Ambala,	844/54		
16	Talal Ram,	.. Najibabad,	842/54		

1897.

No.	Names.	Rank and Corps, and whence abstracted	Marks gained	Percent	Remarks.
17	Sul Chand,	.. Meerut,	..	837/54	
17	Mazhar Hussam,	.. Saharanpur,	..	837/54	
19	Dhan Singh,	.. Meerut,	..	831/54	
20	Shib Dat,	.. Hapur,	..	773/50	
21	Akram Ah,	.. Sikandarabad,	..	774/50	
23	Sayram Khan,	.. Nakor,	..	772/50	
23	Harnam Singh,	.. Landhaura,	..	771/50	
24	Isl Chand,	.. Deoband,	..	733/47	
25	Banik Lal,	.. Sikandarabad,	..	709/48	
26	Cham Bakh,	.. Deoband,	..	699/45	
27	Rahim Bakhsh (A),	.. Meerut,	..	694/45	
28	Ali Bakhsh,	.. Najibabad,	..	687/44	
29	Gulam Morisa,	.. Saharanpur,	..	664/43	
30	Zahur Ahmad,	.. Deoband,	..	637/42	
31	Eam Sarop,	.. Sikandarabad,	..	641/41	
<i>Master Class</i>					
<i>(Full Marks, 850)</i>					
1	Chani Lal,	.. Masan,	..	240/60	Passed as Head Artificer

1898.

ENGINEER CLASS.					
<i>(Full Marks, 2000).</i>					
1	Graves, H	.. England,	..	2145/74	<i>Higher Standard.</i> Council of India Prize of Rs 1,000. Cantley Gold Medal. Colonel Medley's Prize for Civil Engineering.
2	Ellison, E. C.,	.. Ensign, 58th Regiment,	..	1908/68	<i>Higher Standard.</i> Government Prize of Rs 1,000.
3	Bradley, B.	.. St. Xavier's Col., Calcutta,	..	1882/68	<i>Higher standard</i>
4	Smallman, H.	.. St. George's, Mysore,	..	1853/57	
5	Koelan, E. J.,	.. Mr. Maddock's, Mysore,	..	1849/57	Thomason Gold Medal
6	Palmer, H.,	.. England,	..	1552/54	
7	Miller, J. F.,	.. Ensign, 1st Bn., 19th Regt.,	..	1436/50	
8	Dease, F. F.,	.. Mr. Maddock's, Mysore,	..	1186/39	
9	Uale, G. H.,	.. Lieut., 103th Light Infy.,	..	812/28	
UPPER SUBORDINATE CLASS.					
<i>(Full Marks, 1650).</i>					
1	Hodges, E.,	.. England,	..	1639/99	<i>Higher Standard.</i> Prizes for General Merit, Mathematics, Civil Engineering, Surveying, and Special Prize for Physical Science.
2	Jackson, R.,	.. Private, 21st Hussars,	..	1349/82	<i>Higher Standard.</i> Special Prize for Photography.
3	Grogg, G.,	.. Private, 90th Regiment,	..	1310/79	
4	Scollard, J.,	.. Private, 1-3rd Regiment,	..	1298/79	
5	Chapman, T.,	.. S Smith, E.-A., R H Arty,	..	1295/78	<i>Higher Standard.</i>
6	Bradley, T.,	.. Private, 2-12th Regiment,	..	1206/78	
7	Pery, W.,	.. Sergeant, 105th Regiment,	..	1204/78	

1868

No	Name	Rank and Corps, and where educated.	Marks gained	Percent.	Remarks
8	Sparks, G T,	.. Corporal, C-8, Royal Arty.,	1135	69	<i>Higher Standard.</i> Prize for Drawing
9	Stewart, J.,	.. Lance-Sergeant, 77th Regt.,	1116	68	
10	Byrne, M,	.. Private, 2-12th Regiment,	1114	68	
11	Gibney, J,	.. Private, 94th Regiment, ..	1085	66	<i>Higher Standard</i> <i>Special Prize for Urdu.</i>
12	McCarthy, J,	.. Private, 35th Regiment, ..	1084	66	
13	Riddale, W,	.. Bomb, A-F, R H Arty, ..	1056	64	
14	Pace, T,	.. Sergt, A-F, R H Arty, ..	1042	63	
15	Henderson, F A,	.. Corpl, 105th Regiment, ..	1038	63	
16	Radcliffe, H O,	.. Tp Sergt-Major, 21st Hrs.,	1038	63	
16	Dunbar, B,	.. Private, 2-12th Regiment,	1036	63	
18	Henry, G,	.. La Martinière, Lucknow, ..	1084	65	
19	Braslow, J,	.. Lance-Corpl, 21st Hussars,	1015	63	
20	Wilson, J,	.. Gunner, A-A, R H Arty,	994	60	
21	Leung, J,	.. Gunner, B-A, R. H Arty,	989	60	
22	Taylor, G,	.. Sergt, Sappers and Miners,	970	59	
22	Thompson, J F,	.. Private, 7th Hussars, ..	969	59	
24	Rogers, S,	.. Private, 55th Regiment, ..	960	58	
25	Kappur Singh,	..	950	58	
26	Condon, H,	.. Lawrence Military Asylum,	945	57	<i>Prize for Urdu.</i>
27	Fortgen, J,	.. Lance-Corpl, 105th Regt.,	948	57	
28	Mathews, H,	.. Lance-Sergt, 21st Hussars,	930	56	
29	Moore, T,	.. Lance-Sergt, 1-11th Regt.,	920	56	
30	Cowley, G,	.. Private, 20th Hussars, ..	880	53	
31	Williamson, J.,	.. Corpl, Royal Engineers, ..	875	53	
32	Clovelley, J,	.. La Martinière, Lucknow,	874	53	
33	McAleer, J,	.. Gunner, F-19, Royal Arty,	861	52	
34	Shepherd, K.,	.. Private, 55th Regiment, ..	836	51	
35	Connolly, B,	.. Lance Corpl, 7th Hussars,	775	47	
36	Macartney, H,	.. Private, 77th Regiment, ..	761	46	
37	Hassan Muhammad,	..	757	46	
38	Balog Ram,	..	735	45	
39	Clarke, T,	.. Sergt, Royal Engineers, ..	445	27	
40	Gobind Lal,	..	424	26	
LOWER SUBORDINATE CLASS.					
<i>(Full Marks, 1400)</i>					
<i>Sub-Officers, (Military).</i>					
1	Ala Vadhaya,	.. Sepoy, Bengal S. and M.,	549	64	<i>Special Prize for General Merit.</i>
2	Sheikh Ali,	.. Sowar, 1st Regt, C I H,	530	53	
3	Mahbab Ali,	.. Sowar, 8th Regt, B O, ..	489	31	
4	Narayan Singh,	.. Sepoy, Bengal S. and M.,	408	25	
5	Hamdan Khān,	.. Sepoy, Bengal S. and M.,	397	25	
6	Ahmad Hussain,	.. Duffadar, 8th Regt, B C,	326	21	
7	Imām Bakhsh,	.. Sepoy, Bengal S. and M.,	323	20	
<i>Sub-Officers, (Civil).</i>					
1	Muhammad Ali,	.. Meerut,	1254	78	<i>Higher Standard</i> Prizes for General Merit, Mathematics, and Surveying.
2	Shoo Narayan,	.. Akbarpur,	1185	74	
<i>Higher Standard</i> Prize for Civil Engineering.					

1868

No	Name.	Rank and Corps, and where educated.	Marks out of 1000	Remarks.
3	Shankar Lal,	Bijaor,	1080.63	Higher Standard Prize for Drawing.
4	Jamma Das,	Amroha,	1079.67	
5	Bishan Chand,	Ludhiana,	1082.60	
6	Sukh Lal,	Agra College,	1019.64	
7	Lachman Bahay,	Bulandshahr,	1012.68	Higher Standard.
8	Bakkar Prasad,	Chattri,	986.62	
9	Nadan Singh,	Meerut,	973.61	Special Prize for English
10	Sant Lal,	Umhalla,	954.58	
11	Muhammad Ali Khan,	Bareilly College,	932.59	
12	Sally Ram,	Jagadhri,	892.56	
13	Nar Singh Das,	Jagadhri,	850.58	
14	Imat Singh,	Deoband,	835.52	
15	Wah. Muhammed,	Meerut,	797.50	
16	Muhammad Alladad,	Pahala,	790.49	
17	Abdul Aziz,	Shahjahanpur,	774.48	
18	Hardeo Prasad,	Banars,	745.47	
19	Chotan Lal,	Roorkee,	736.43	
20	Kamraj Das,	Meerut,	692.43	
21	Sham Lal,	Meerut,	673.43	
22	Kharag Singh,	Madhopur,	668.41	
23	Bakur Khan,	Shahjahanpur,	650.41	
24	Ramp Das,	Katihar,	585.87	
25	Nebi Baksh,	Deoband,	489.80	
Metri Class				
(Full Marks, 350)				
1	Shiba,	Mason,	200.57	
2	Madi Dhar,	Mason,	164.58	

1869

ENGINEER CLASS

(Full Marks, 2050)

1	Evans, C,	England,	3308.75	Higher Standard Council of India Prize of Rs 1,000 Centley Gold Medal for Mathematics Col MacLagan's Prize for Physical Science Col Medley's Prize for Civil Engineering
2	Danlop, S. J,	Lieut, 23rd R. W Fusiliers,	1867.68	Higher Standard Thomson Gold Medal for best Design Prize for Drawing
3	O'Toole, L,	Lawrence Military Asylum,	1786.80	Higher Standard
4	Nelson, R,	La Martinière, Lucknow,	1595.54	
5	Bashan, K,	R. C College, Vizagapatam,	1568.43	
6	Story, W. M,	Lieut, 2nd Sikh Infantry,	1476.50	
7	Smith, W,	Mumoorie School,	1349.48	
8	Browne, W. H,	Lieut, 7th Fusiliers,	1061.86	
9	O'Sullivan, E,	St. Xavier's, Calcutta,	799.27	

1869

No.	Names.	Rank and Corps, and where allocated.	Actual Marked	Final	Remarks.
UPPER SUBORDINATE CLASS.					
(Full Marks, 1880)					
1	Higgins, J.	.. Private, 20th Hussars, ..	1862	76	Higher Standard Prize for General Merit
2	Collins, P.	.. Private, 105th Regiment, ..	1260	76	Higher Standard Prizes for Civil Engineering and Surveying
3	Pearson, W.	.. Lance-Corpl., 20th Hussars, ..	1249	76	Higher Standard. Prize for Mathematics
4	Dahora, G.	.. Trumpeter, C-8 Royal Arty	1233	75	Higher Standard
5	Hill, W.	.. Trp-Sergt-Major, 11th Hrs	1208	75	Higher Standard
6	Horne, F.	.. Bomr F-C, R H. Artillery, ..	1194	72	Prizes for Drawing & Physical Science.
7	Green, T.	.. Lance-Corpl, 102nd Regt., ..	1190	72	
8	Butler, M.	.. St Peter's College, Agm., ..	1116	68	
9	Reed, R.	.. Lance-Corpl, 1-5th Regt., ..	1112	67	
10	Giles, J.	.. Cr-Sergt, 102nd Regiment, ..	1100	67	Higher Standard.
11	Bowland, W.	.. Gunner, B-A., R H Arty, ..	1053	64	
12	Reynolds, J.	.. Lance-Corpl, 104th Regt., ..	1058	64	
13	Fryer, P.	.. Private, 33rd Regiment, ..	1056	64	
14	Young, H.	.. Bombr, 8-22 R Artillery, ..	1053	64	
15	McGenty, J.	.. Sergt., 32nd Highlanders, ..	981	59	Special Prize for Photography.
16	Cook, J.	.. Pte., 2nd Bn, Rifle Brigade	973	59	
17	McMinn, I.	.. Bomr, C-A, R H Artillery, ..	968	59	
17	Assad-din,	..	968	59	Higher Standard
19	Shaw, G.	.. Private, 39th Regiment, ..	964	58	
19	Douglas, H.	..	964	58	
21	Withey, J.	.. Private, 30th Regiment, ..	960	58	
22	Esm Prasad,	..	935	58	
23	Graham, C.	.. Gunner, E-16, R Artillery, ..	954	58	
24	McLroy, P.	.. Private, 105th Regiment, ..	927	56	
25	Babal Ray,	..	912	55	
26	Gray, J.	.. Lieut-Sergt., 105th Regiment	898	54	
27	Robinson, F.	.. Qr-Mr. Sergt., 1st M. N. L.	889	54	Special Prize for Urdu
28	Haji Bakshah,	..	887	54	
29	Kidarnath Mitor,	..	888	54	
30	Byrna, F.	.. Lance-Corpl, 1-11th Regt., ..	876	53	
31	Scarrier, J.	.. Lance-Corpl., 104th Regt., ..	871	53	
32	Twar, J.	.. Lieut-Corpl., 30th Hussars, ..	859	52	
33	Martos, H.	..	850	52	
34	Heeson, M.	.. Bombr, C-59, R Artillery, ..	854	52	
35	Spence, T.	.. Private, 107th Regiment, ..	858	52	
36	Monks, W.	.. Lance-Corpl., 105th Regt., ..	821	50	
37	Shashi Bhushan Chatterjee.	..	819	50	
38	Dwyer, J.	.. Private, 2-12th Regiment, ..	817	50	
39	Quealey, J.	.. Private, 102nd Regiment, ..	785	49	
40	Najikumar Mukerjee, ..	..	770	47	
41	Keeley, W.	.. Corporal, 102nd Regiment, ..	759	46	
42	Mir Mohammed Ziaul Haque,	..	718	45	
43	Gerraghty, T.	.. Private, 41st Regiment, ..	708	43	
44	McGregor, D.	.. Bombr., 2-25, R Artillery, ..	687	42	

1869.

No.	Names	Rank and Corps, and where educated.	Marks gained	Percent	Remarks
43	Power, J.	.. Corporal, 38th Regiment, ..	673	41	
46	Byrnes, J.	.. Gunner, G-F, R. H. Arty.	657	40	
47	Hannay, F.	.. Corporal, E-16, R. Artillery	604	37	
48	Bachhaur Nath,	...	565	34	
LOWER SUBORDINATE CLASS					
<i>(Full Marks, 1600)</i>					
<i>Sub-Overseers, (Military)</i>					
35	Kirpal Singh,	.. Sowar, 11th Regt., B C,	283	18	
39	Dharm Singh,	.. Sowar, 11th Regt., B C,	242	15	
<i>Sub-Overseers, (Civil)</i>					
1	Sri Ram,	.. Kanauts,	1249	78	<i>Higher Standard</i> Prizes for General Merit, Mathematics, Civil Engineering and Surveying
2	Prabhat Lal (1),	.. Meerut,	1192	74	<i>Higher Standard</i>
3	Jwala Prasad,	.. Meerut,	1140	71	<i>Higher Standard</i> Prize for Drawing
4	Murti Dhar,	.. Deoband,	1092	68	
5	Jagmohan Lal,	.. Sikandarabad,	1092	68	
6	Lekh Raj,	.. Saharanpur,	1081	68	<i>Higher Standard</i>
7	Nardyna Das (1),	.. Anpohahr,	1060	67	
8	Ganga Prasad,	.. Najibabad,	1008	63	
9	Jehan Singh,	.. Bhapat,	945	59	
10	Kara Mal,	.. Bhapat,	923	58	
11	Ram Prasad,	.. Sikandarabad,	765	48	
12	Kunar Sen,	.. Bytor,	743	46	
13	Mahbab Khan,	.. Daskaur,	712	45	
14	Hardeo Lal,	.. Sikandarabad,	698	44	
15	Umrso Singh (1),	.. Saharanpur,	692	43	
16	Ahmad Ali,	.. Meerut,	674	42	
17	Kimr-ud-din,	.. Meerut,	668	42	
18	Pyari Lal,	.. Sikandarabad,	661	41	
19	Nihal Singh,	.. Jagadhri,	643	40	
19	Gulab Chand,	.. Najibabad,	643	40	
21	Umar Khan,	.. Meerut,	641	40	
22	Lachman Das,	.. Najibabad,	632	40	
23	Muhammad Ismail Khan,	.. Meerut,	608	38	
24	Muhammad Hussain,	.. Meerut,	575	36	
25	Abdul Rehman,	.. Moradabad,	570	36	
26	Ilahi Lal,	.. Anpohahr,	545	34	
27	Chotu Singh,	.. Sikandarabad,	530	33	
28	Bansi Ram,	.. Dehra,	524	33	
29	Shankar Ali,	.. Meerut,	370	17	
<i>(Full Marks, 1600)</i>					
1	Ram Kishan,	.. Dehra,	639	40	Qualified as 3rd Class Sub-Overseers by Special Examination in the middle of the Season.
2	Nand Lal Hussain,	.. Manglaur,	637	40	
3	Isht Prasad,	.. Moradabad	617	39	
4	Bhawan Prasad,	.. Chattri,	585	37	

1869.

No.	Name.	Rank and Corps, and where educated.	Age	Grade	Remarks.	
5	Madoho Ram,	Donkaur,	568	57	Qualified as 3rd Class Sub-Overseers by Special Examination in the middle of the Session.	
6	Bei Kishan Das,	Faridabad,	547	55		
7	Wirtayan Das (2),	Gujrat,	540	54		
8	Ganga Sahay (1),	Sikandarabad,	538	54		
9	Barkat Ullah Khan,	Shahjahanpur,	528	53		
10	Banwar Lal,	Jalilabad,	531	53		
11	Uned Singh,	Gangoh,	517	52		
12	Abdul Hamid,	Deoband,	510	51		
13	AMJ Hamein,	Aligarh,	508	51		
14	Muhammed Sadullah,	Moradabad,	505	51		
15	Kandun Lal,	Gangoh,	487	49		
16	Sukha Nand,	Gangoh,	482	48		
17	Bai Chand,	Roorkhee,	481	48		
18	Ganga Sahay (2),	Sikandarabad,	477	48		
19	Choti Lal,	Rajpur,	467	46		
20	Walla Muhammed,	Fyzabad,	459	48		
<i>Mistri Class</i>						
<i>(Full Marks, 350).</i>						
1	Makidun Bakhsh,	Mason,	222	28		
2	Ram Prasad,	Carpenter,	181	52		

1870.

ENGINEER CLASS.

(Full Marks, \$100).

1	Greenwood, C,	St. Xavier's Col, Calcutta,	2016	65	<i>Higher Standard</i> Council of India Prize of Rs 1,000 Col Macleagan's Prize for Physical Science
2	Bramson, C E D,	Capt., 67th F N. Infantry,	2000	63	<i>Higher Standard</i> Government Prize of Rs 1,000 Thomson's Gold Medal for best Design. Prize for Drawing
3	Carey, H. R. LaM,	Lieut., 8th Royal Regiment,	1944	68	<i>Higher Standard</i> Col. Medley's Prize for Civil Engineering
4	Slater, J S,	Sp Cotton School, Sumla,	1849	60	<i>Higher Standard</i> Cantley Gold Medal for Mathematics.
5	Blochmann, J. S A,	Doverton College, Calcutta,	1728	56	
6	Leupolt, H. J,	Switzerland,	1710	56	
7	Martin, G W,	Enaga, 88th Con Bangers,	1684	54	<i>Special Prize for Photography,</i> 1869.
8	Lilley, A R,	La Martinière, Lucknow,	1557	50	
9	Bolle, J T,	La Martinière, Lucknow,	1556	50	
10	Rishi Lal,	St. John's College, Agra,	1550	50	Hai Kunhya Lal's Prize for General Merit.
11	Parold, A,	St Peter's College, Agra,	1531	49	
12	Brijpat Ray,	St John's College, Agra,	1492	48	
13	O'Callaghan, W J,	Lieut., 1-11th Regiment,	1463	47	
14	Parnanah, H,	St Peter's College, Agra,	1460	47	
15	Told Ram,	Dalhi College,	1284	41	

1870.

No.	Names	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks
UPPER SUBORDINATE CLASS. (Full Marks, 1880).					
1	Taylor, W.,	.. Private, 104th Regiment, ..	1808	79	Higher Standard Prizes for General Merit and Surveying
2	Topple, E. J.,	.. Lance-Corpl, 104th Regt.,	1858	76	Higher Standard Prizes for Mathematics and Civil Engineering
3	Griffin, T.,	.. St. Peter's College, Agre, ..	1216	74	Higher Standard.
4	Tyars, J.,	.. Barrack Sergt., Untd. List.	1186	69	
5	Harvey, J. E.,	.. Private, 4th Hussars, ..	1109	67	Higher Standard Qualified in Photography.
6	Hotchkiss, E.,	.. Lance-Corpl, 1-7th Regt.,	1068	66	Higher Standard Prize for Physical Science.
7	Forward, G.,	.. Corporal, 2-25th Regiment,	1080	65	Higher Standard.
8	Dempsey, R.,	.. Private, 4th Hussars, ..	1074	65	
9	Kearns, F.,	.. Lance-Corporal, 1-5th Regt.	1057	64	
10	Boyton, G., alias Thorpe, G. J.,	.. Corporal, F-10, R. Artillery,	1038	63	
11	Lynch, J.,	.. Private, 102nd Regiment, ..	1033	63	Higher Standard. Qualified in Photography
12	McIntosh, R.,	.. Lance-Corpl, 2-25th Regt.,	1020	63	Higher Standard.
13	Woodville, H.,	.. Corporal, 4th Hussars, ..	1006	61	Higher Standard Prize for Drawing Special Prize for Photography.
14	Boughton, J.,	.. Sergt. Major, 2-25th R. Arty,	999	61	Higher Standard.
15	Williams, T.,	.. Bomb, E-3, R. Artillery, ..	996	60	
16	Bayham, H.,	.. Lance-Corpl, 21st Hussars,	943	57	
17	Donovan, J.,	.. Pte, 3rd Bn, Rifle Brigade,	940	57	
17	Carmey, W.,	.. Gunner, 5-23, Royal Arty,	940	57	
19	Gokal Prasad,	.. ..	930	56	
20	Douglas, G.,	.. Sergeant, 36th Regiment, ..	930	56	
21	Crawshaw, S.,	.. Lance-Corpl, 2-20th Rifles,	918	56	
22	Gee, J.,	.. Lance-Corpl, 2-24th Regt.,	909	55	
23	Turner, W. R.,	.. Private, 1-5th Regiment, ..	881	53	
24	Freemantle Ghose,	.. ..	889	53	
25	Harvey, J.,	.. Gunner, A-16, Royal Arty,	851	53	
26	Macriean, A.,	.. Bomb, 2-24 R. Arty, ..	846	57	
27	Gurd, T.,	.. Private, 37th Regiment, ..	839	51	
28	Groom, T.,	.. Lance-Corpl, 26th Regt., ..	832	50	
29	Tikam Das,	.. ..	805	49	
30	Dakhina Hanjin Mukerjee,	.. ..	804	49	
31	Kay, G.,	.. Sergeant, 36th Regiment, ..	785	48	
32	Stanger, H.,	.. Private, 1-5th Regiment, ..	768	47	
33	Abdul Sattar,	.. ..	767	46	
34	Hanley, M.,	.. Lance-Sergt, 37th Regt., ..	766	46	
35	Hudson, J.,	.. Bp. Cotton School, Simla,	745	45	
36	Farrell, F.,	.. Private, 103rd Regiment, ..	743	45	
37	Monck, V. F.,	.. Pte, 3rd Bn., Rifle Brigade,	738	44	Qualified in Photography.
38	Behendramith Mukerjee,	.. ..	718	44	
39	Parmeswari Das,	.. ..	717	43	

1870

No.	Name.	Rank and Corps, and where educated	Marks gained	Percent	Remarks.
42	Dodd, A.,	Lance-Sergt., 1-6th Regt., ..	710	43	
43	Azarnáth,	..	710	43	
43	Meehan, F.,	Lance-Corpl., 27th Regt., ..	707	43	
43	Derumson, S.,	Lance-Sergt., 21st Hussars,	697	42	
44	Kelly, J.,	Gunner, E-16, Royal Arty.,	687	42	
45	Mádhonádaa Baahita,	..	686	42	
45	Tolna, T. H.,	Sergeant, 55th Regiment,	675	41	
47	Fitzgerald, G.,	Lance-Corpl., 56th Regt.,	673	41	
48	Fateh Hussain,	..	669	40	
49	Jolly, W.,	Private, 1-6th Regt., ..	626	38	
50	Denehy, P.,	Lee-Corpl., 37th Regt., ..	620	38	
51	Tahá Rám,	..	616	37	
53	Caniston, H.,	Lee-Corpl., 77th Regt.,	597	36	
53	King, J.,	..	586	36	
54	Leary, W.,	Private, 21st Hussars,	575	35	
55	Boston, R.,	Gunner, E-16, R. Arty.,	511	31	
56	Craig, J.,	Lee-Corpl., 1-7th Regt., ..	475	30	
57	Malawa Rám,	..	498	30	
58	Hurren, J.,	Private, 37th Regt., ..	476	29	
59	Chau Lál,	..	473	29	
60	Gouri Shankar,	..	445	27	

LOWER SUBORDINATE CLASS.

(Full Marks, 1500).

Sub-Overseers, (Military)

13	Ramáwa Singh,	..Kote Duffadar, 12th B C,	691	46	
16	Gobind Singh,	..Sepoy, 27th P N I., ..	501	31	
17	Amir Ali Khán,	..Sepoy, 10th P N I., ..	455	28	
19	Hussain Khán,	..Sowar, 6th B C., ..	404	25	
19	Hussain Khán,	..Sowar, 6th B C., ..	401	25	
21	Kale Singh,	..Sowar, 5th B C., ..	387	24	
22	Shám Singh,	..Sepoy, 27th P N I., ..	390	24	
24	Balwant Singh,	..Sepoy, 30th P N I., ..	372	23	
25	Ganesh Singh,	..Sepoy, 30th P N I., ..	344	22	

Sub-Overseers, (Civil).

1	Amrit Ray,	..Saháranpur,	1288	81	Higher Standard. Prizes for General Merit, Mathematics, and Civil Engineering.
3	Kirpa Rám,	..Ludhiána,	980	58	Higher Standard,
3	Shankar Ali,	..Meerut,	902	58	
4	Abdál Aza,	..Ambahita,	859	54	
6	Mangal Sen,	..Ambahita,	834	53	
6	Wáyd Ah,	..Bijnor,	804	50	
6	Házari Lál,	..Nayáhabad,	804	50	
8	Gulám Inám,	..Saháranpur,	746	47	
9	Wazir Chand,	..Guzrat,	742	46	
10	Rahím Mahesh (2),	..Shahábad,	717	45	
11	Gobind Sahay,	..Shikharábad,	710	44	
12	Mathab Singh,	..Roorkee,	697	44	
14	Rám Lál,	..Siwaha,	675	42	

1870.

No.	Name.	Rank and Corps, and where educated.	Mark obtained.	Remarks.
15	Roshan Lal,	.. Delhi,	524.35	
20	Salik Ram,	.. Najibabad,	533.25	
25	Gobind Prasad,	.. Sikandrabad,	571.35	
26	Rajdeo Sahay,	.. Bijnor,	185.12	
<i>Sub-Surveyors</i>				
1	Fateh Chand,	.. Roorkee,	1102.69	<i>Higher Standard</i> Prize for Surveying.
2	Sohan Lal,	.. Meerut,	1080.68	<i>Higher Standard,</i>
3	Jhandu Singh,	.. Phulodah,	652.53	
4	Chand Lal,	.. Agra Normal School,	605.50	
5	Abdul Ali,	.. Meerut,	791.49	
6	Ragbar Dayal,	.. Najibabad,	771.46	
7	Rahmat Ali,	.. Deoband,	745.46	
8	Abdul Aftab,	.. Roorkee,	737.46	
9	Ibrahim Khan,	.. Roorkee,	720.45	
10	Chamman Lal,	.. Saharanpur,	638.42	
11	Chotam Das,	.. Deoband,	672.42	
<i>Estimators and Draftsmen.</i>				
1	Hakim Ali,	.. Amritsar,	977.61	<i>Higher Standard.</i> Prize for Estimating.
2	Hamid Ali,	.. Meerut,	928.59	<i>Higher Standard.</i> Prize for Drawing.
3	Nasim Ullah,	.. Bijnor,	581.55	
4	Jhandu Mal,	.. Gangoh,	553.53	
5	Ganga Sahay,	.. Hapur,	541.53	
6	Firhat Lal,	.. Najibabad,	726.45	
7	Udho Bhan,	.. Gurdaspur,	694.43	
8	Bhan Lal,	.. Meerut,	676.42	
9	Rahim Bakhsh (1),	.. Shikharbad,	653.41	
<i>Minor Class.</i>				
<i>(Full Marks, 350).</i>				
1	Karim Bakhsh,	.. Carpenter,	210.60	

1871.

ENGINEER CLASS.
(Full Marks, 3150).

1	Graves, F. L.,	Lieut., Royal Artillery,	2567.81	<i>Higher Standard</i> Government Prize of Rs 1,000. Cantley Gold Medal for Mathematics. Colonel Medley's Prize for Civil Engineering. Col. Mac-lagan's Prize for Physical Sciences.
2	Buller, C. E.,	.. Lieut., Royal Artillery,	2476.79	<i>Higher Standard</i> Government Prize of Rs 1,000. Qualified in Photography.

1871.

No.	Name.	Rank and Corps, and where educated	Marks obtained	Percent	Remarks.
3	Boothland, J. F.,	Rev. Maddock's, Munroore,	2431	77	<i>Higher Standard</i> Council of India Prize of Rs. 1,000. Prize for Drawing. Qualified in Photography.
4	Kinson, J.,	Ep. Cotton School, Sumla,	2258	72	<i>Higher Standard.</i>
5	Bosher, E. W. F.,	England,	2041	65	<i>Higher Standard</i> Thompson Gold Medal for best Design.
6	Wingate, T. O.,	Lieut., 31st Regiment,	2022	64	<i>Higher Standard</i> Government Prize of Rs. 1,000
7	Monies, A.,	Munroore School,	2021	64	Qualified in Photography.
8	Bagley, J. R.,	Munroore School,	1993	58	
9	Murray, E.,	La Martinière, Lucknow,	1990	63	<i>Higher Standard.</i>
10	Bhagat Singh,	Govt. College, Lahore,	1862	56	Rai Kumbha Lal's Prize of Rs. 50.
11	Oelgenbean, A.,	Germany,	1823	58	
12	Brown, W. B.,	Ep. Cotton School, Sumla,	1771	56	
13	Lackstadt, H.,	Munroore School,	1711	54	
14	Lamond, W. A.,	England,	1645	52	
15	Rheemith, S. A.,	Government College, Delhi,	1640	52	
16	Norman, M. J.,	St. Xavier's Col., Calcutta,	1617	51	
17	Baxter, B.,	La Martinière, Lucknow,	1574	50	
18	Douglas, E.,	Munroore School,	1573	50	
19	McGowan, C.,	Munroore School,	1455	47	Failed
20	Deane, R.,	Munroore School,	1459	46	
UPPER SUBORDINATE CLASS.					
(Full Marks, 1850).					
1	Colman, J.,	Private, 2-60th Rifles,	1249	76	<i>Higher Standard.</i> Prizes for General Merit and Physical Science
2	Doyle, M. (1),	Private, 21st Hussars,	1236	75	<i>Higher Standard</i> Prize for Civil Engineering
3	Calvert, L.,	St. Peter's College, Agra,	1214	74	<i>Higher Standard.</i> Prize for Mathematics
4	Pagan, W.,	Private, 38th Regiment,	1128	68	<i>Higher Standard.</i> Prize for Drawing
5	Kedarnath Banerjee,		1103	67	<i>Higher Standard.</i>
6	Murphy, J.,	St. Peter's College, Agra,	1059	64	
7	St. Aubyn, H.,	Gunner, C-16, Royal Art'y,	1028	62	<i>Higher Standard</i> Prizes for Surveying and Photography.
8	Marr, W.,	Color-Sergt., 2-10th Regt.,	1014	61	
9	Williams, W. R.,	Lance-Corpl., 37th Regt.,	987	60	
10	Ghulam Hassan,		964	58	
11	Karnadath Mukerjee,		959	58	
12	Brandon, A.,	Sergt., 21st Hussars,	955	58	2nd Prize for Photography.
13	Clancy, L.,	Private, 106th Regiment,	942	57	
14	Todd, J.,	Lance-Corpl., 96th Regt.,	925	56	Qualified in Photography.
15	Lachmi Chaud,		914	55	
16	Pope, G.,	Corporal, A-D, R. H. Art'y.,	912	55	
17	Highway, E.,	Private, 21st Hussars,	899	55	Qualified in Photography.
18	Robinson, J.,	Lance-Corpl., 2-35th Regt.,	895	55	
19	Douglas, W. R.,	Corporal, B-23, B. Artillery,	891	54	
20	Thompson, T.	Lance-Sergt., 21st Hussars,	883	54	

1871.

No	Name.	Rank and Corps, and where educated.	Marks achieved.	Percent.	Remarks.
21	Pamnah, A. A.,	.. St. Peter's College, Agre,	877	58	
22	Kirpa Ram,	..	850	52	
23	Talbot, H.,	.. Lance-Corpl., 85th Regt.,	849	51	
24	Aparva Krishna Matar,	..	845	51	
25	Dhan Singh,	..	843	51	
26	Montagos, C.,	.. Corporal, 90th Regiment,	843	51	
27	Clarke, C. J.,	.. Private, 96th Regiment,	843	50	
28	Armesworth, C.,	.. Private, 2-80th Rifles,	836	50	
29	Sureswar Sinha,	..	826	50	
30	Williams, J.,	.. Private, 2-12th Regiment,	824	50	
31	Doyle, M. (2),	.. Lance-Corpl., 1-14th Regt.,	819	50	
32	Devine, J.,	.. Lance-Corpl., 2-60th Rifles,	818	50	
33	Harrington, B. R.,	.. Private, 38th Regiment,	815	49	
34	Newitt, S. J.,	.. Lance-Corpl., 38th Regt.,	814	49	
35	Byrne, W.,	.. Private, 1 3rd Regiment,	814	49	
36	O'Hagin, C.,	.. Gunner, 4-25, Royal Arty,	803	49	
37	Edwards, R.,	.. Lance Corp., 1-6th Regt.,	789	48	
38	Lewis, R.,	.. Lawrence Military Asylum,	787	48	
39	McLeod, H.,	.. Lawrence Military Asylum,	786	48	
40	Blanford, J.,	.. Private, 2-12th Regiment,	771	47	Qualified in Photography
41	Douglas, W.,	.. Driver, B-F, R H Arty,	765	46	
42	Brownless, J.,	.. Lance-Corpl., 30th Hussars,	759	45	
43	Austin, G.,	.. Sergt., U L, Barrack Dept.,	737	45	
44	Imes, E.,	.. Sergeant, 11th Hussars,	728	44	
45	Faddock, G.,	.. Driver, B-F, R H Arty,	718	42	
46	Pethard, J.,	.. Private, 1-6th Regiment,	710	43	
47	Walsh, M.,	.. Bombr, D-F, R H Arty,	707	43	
48	Murtha, E.,	.. Corporal, 86th Regiment,	701	42	
49	Crampton, J.,	.. Corporal, 86th Regiment,	696	42	
50	Kali Charn,	..	693	42	
51	Manning, D.,	.. Lance-Corpl., 2-25th Regt.,	691	42	
52	Webster, J.,	.. La Martiniers, Lucknow,	688	42	
53	Denmade, W.,	.. Private, 32nd Regiment,	673	41	
54	Rank Lal Dutt,	..	680	40	
55	Barber, J.,	.. Lee-Corpl., 35th Regiment,	651	39	
56	Wrenn, W.,	.. St George's, Mussoorie,	609	37	
57	Smith, S.,	.. Private, 1-5th Regiment,	594	38	
58	Sita Ram,	..	536	32	Failed
59	Lovegrove, D.,	.. Bombr, E-A, R H Arty,	511	31	
60	McMahon, J.,	.. Gunner, 3-24, R. Arty,	507	31	
61	Corrigan, H.,	.. Sergt., 11th Hussars,	474	29	
LOWER SUBORDINATE CLASS					
<i>Sub-Overseers, (Military)</i>					
<i>(Full Marks, 1600)</i>					
1	Bai Khan,	.. Sowar, 12th B C,	533	33	
2	Bai Singh,	.. Sepoy, 24th P N I,	479	30	
3	Shambho Dai,	.. Sepoy, 27th P N I,	442	28	
4	Narayan Singh,	.. Sowar, 2nd C I H.,	439	27	
5	Narasim Dai,	.. Sowar, 12th B C,	430	26	
6	Dalut Singh,	.. Sepoy, 35th N. I.,	409	26	

1871.

No.	Name.	Rank and Corps, and where educated.	Maths.	English.	Remarks.
7	Atar Singh,	.. Sower, 12th B. C.,	403	25	
8	Ali Jan,	.. Lance-Duffadar, 6th B. C.,	389	24	
9	Slypader Khan,	.. Duffadar, 6th B. C.,	379	24	
10	Mohammad Husein,	.. Duffadar, 3rd B. C.,	377	24	
<i>Sub-Overseers, (Civil).</i>					
1	Sankar Lal,	.. Khids,	1083	35	<i>Higher Standard</i> Prize for General Merit.
2	Barkat Ali,	.. Delhi,	977	41	<i>Higher Standard</i>
3	Khayu Singh,	.. Sikandarabad,	914	57	
4	Fateh Singh,	.. Raipur,	876	53	
5	Umrao Singh,	.. Deoband,	818	51	
6	Mashur Hussain,	.. Jagadhri,	799	50	
7	Muhammad Nazir,	.. Sikandarabad,	780	49	
8	Sohan Lal,	.. Hissar,	759	47	
9	Mungh Khis,	.. Jagadhri,	747	45	
10	Kulwant Ray,	.. Hissar,	710	44	
11	Mangal Sen,	.. Dabai,	684	42	
12	Rustambharnath,	.. Faridabad,	653	41	
13	Mula Baksh,	.. Moudabad,	605	38	
14	Banjit Singh,	.. Meerut,	598	37	
15	Motira Prasad,	.. Muchachin,	566	35	
<i>Sub-Surveyors</i>					
1	Ahmad Beg (?),	.. Byana,	946	59	<i>Higher Standard</i> Prize for Surveying
2	Ahmad Beg (?),	.. Meerut,	850	53	
3	Fyzal Hussain,	.. Gohana,	880	52	
4	Kadir Beg,	.. Meerut,	820	51	
5	Asir Ali,	.. Nihor,	798	50	
6	Hariwari Lal,	.. Saharanpur,	744	47	
7	Manohar Lal,	.. Sikandarabad,	742	46	
8	Bhagwan Das,	.. Saharanpur,	740	46	
9	Ahmad Abbis,	.. Sikandarabad,	738	46	
10	Bakul Ray,	.. Shahabad,	730	46	
11	Fateh Muhammad,	.. Thelam,	723	45	
<i>Estimators and Draftsmen.</i>					
1	Sadallah,	.. Jagnon,	1075	57	<i>Higher Standard</i> Prize for Mathematics.
2	Balmokand,	.. Sikandarabad,	893	63	<i>Higher Standard.</i> Prize for Civil Engineering.
3	Mohammad Abdolah,	.. Hahon,	947	59	<i>Higher Standard</i> Prize for Drawing.
4	Raghubans Sahay,	.. Fahirpur,	885	55	
5	Kaim Ali,	.. Moudabad,	856	54	
6	Ganpat Ray,	.. Khids,	840	53	
7	Ganga Ram,	.. Gangoh,	831	52	
8	Pirali Singh,	.. Boorkee,	838	51	
9	Nanda Ram,	.. Jagnon,	789	49	
10	Mohd Hussain,	.. Sikandarabad,	754	47	
11	Sham-sa-din,	.. Meerut,	689	45	
12	Nadir Hussain,	.. Lucknow College,	683	40	

1871.

No.	Name.	Rank and Corps, and where educated	Marks gained.	Remarks.
Miscellaneous Class.				
(Full Marks, 350).				
1	Isarath Singh,	.. Mason,	221 68	Passed as Hd Artificer, Jan '71.
2	Hardwar Lal,	.. Carpenter,	248 71	" " " April "
3	Muhammad Hussain,	.. Syrian Tile Maker,	194 65	" " " June "
4	Abdullah,	.. Blacksmith,	242 69	" " " Sept. "
5	Ayaz Ali,	.. Painter and Carpenter,	200 57	" " " " "

1872.

ENGINEERS CLASS.				
(Full Marks, 3250).				
1	Willcocks, W,	.. Mussoorie School,	2304 89	<i>Higher Standard</i> Council of India Prize of Rs 1,000 Thomson Gold Medal for best Design Cantley Gold Medal for Mathematics, Col Medley's Prize for Civil Engineering Col MacLagan's Prize for Physical Science, Prize for Drawing
2	Hurst, W P V,	.. Mussoorie School,	2457 78	<i>Higher Standard</i>
3	Bellamy, G M,	.. Lieut., 107th Regiment,	2249 71	<i>Higher Standard</i> Government Prize of Rs 1,000
4	Field, G. M. R,	.. England,	2218 70	<i>Higher Standard</i> Prize for Photography, 1871.
5	Ward, A. E.,	.. Lieut., 16th N. Infantry,	2081 64	<i>Higher Standard</i> Government Prize of Rs 1,000 Qualified in Photography
6	Bhroda Prashid Bora,	Cathl Mission College, Calcutta,	1621 58	<i>Higher Standard</i> The "Thomson Prize" of Rs. 250.
7	Green, J R,	.. St. George's Col, Mussoorie,	1814 58	<i>Higher Standard.</i>
8	Slater, A. W,	.. Bp Cotton School, Sumla,	1786 57	
9	Kanania, G C,	.. England,	1700 54	Qualified in Photography.
10	Davies, J D,	.. Bala Proprietary School,	1697 53	
11	Morgan, R G.,	.. Lieut., 8th Native Infantry,	1525 48	
12	Bailey, K J.,	.. Mussoorie School,	1524 48	
13	Wyatt, J C.,	.. Doveton College, Calcutta,	1518 48	
14	Macroe, G F,	.. Bp Cotton School, Sumla,	1283 41	Failed
UPPER SUBORDINATE CLASS.				
(Full Marks, 1650).				
1	Shaw, G.,	.. Pay-Mr. Sergt., 53th Regt,	1390 85	<i>Higher Standard.</i> Prizes for General Merit, Mathematics, Civil Engineering, Surveying, Drawing, Physical Science, and Photography.
2	Greer, W J,	..	1243 75	<i>Higher Standard.</i> Special Extra General Merit Prize. Qualified in Photography.

1873.

No.	Name.	Rank and Corps, and where stationed.	Age	Height	Weight	Remarks.
3	Thompson, M. R.,	St. Peter's College, Agra,	1133	68		
4	Harinath Chakravarti,		1131	69		Higher Standard.
5	Cox, J.,	Lance-Corpl, 1-14th Regt.,	1076	66		Higher Standard. Qualified in Photography.
6	Durgah Das Datta, ..	"	1070	65		Higher Standard.
7	Westwood, W. G.,	Private, 65th Regiment, ..	1063	64		Higher Standard. Qualified in Photography.
8	Low, J.,	Sergeant, 92nd Regiment,	1046	63		
9	Rand Coppl,	Lahore Government College,	1036	62		Higher Standard.
10	Peria, A.,	Sergeant, 4th Hussars, ..	1014	61		Higher Standard. Qualified in Photography.
11	McCarthy, J.,	St. Fidelis' Military Asylum,	1012	61		
12	Percy, F. J.,	Private, 26th Regiment, ..	968	60		
13	Thomas, L.,	Sergeant, Bt. Department,	962	60		
14	Tuck, J.,	Ce. Sergeant, 96th Regt., ..	972	59		2nd Prize for Photography.
15	Owens, J.,	Sergeant, 62nd Regiment,	962	58		
16	Sadri Das,	"	949	58		
17	Pawest, J.,	Qr.-Mr. Sergt., G-10, R.A.,	946	57		
18	Carleton, H.,	Lieut. Corpl, 57th Regiment,	940	57		
19	Dalip Singh,	"	930	56		
20	Hammill, C.,	St. Fidelis' Military Asylum,	899	54		
21	Callaghan, J.,	St. Peter's College, Agra, ..	897	54		
22	Sheikh Abdul Majid,	"	888	54		
23	Batler, C.,	Lance-Corpl 1-14th Regt.,	876	53		
24	Smith, J.,	Bombardier, F-10, R. Art.,	861	52		
25	Dymally,	"	850	52		
26	Booley, G.,	Lance-Corpl, 1st Regiment,	845	51		
27	Clancy, C.,	Private, 96th Regiment, ..	834	51		
28	McLennan, J.,	Gunner, A-A. R. H. Art.,	812	49		
29	Broome, J.,	Private, 68th Regiment, ..	805	49		
30	Marshall, B.,	Lawrence Military Asylum,	801	49		
31	Carson, R.,	St. Peter's College, Agra,	800	49		
32	Ananda Kanta Gupta,	"	800	48		
33	Durgapada Ghoshal, ..	"	798	48		
34	McIntosh, F.,	Private, 107th Regiment, ..	772	47		
35	Hall, A.,	Lawrence Military Asylum,	776	47		
36	Magee, D.,	Bombardier, B-F, R. H. A.,	771	47		
37	Chana, J.,	Trumpeter, Royal Artillery,	754	46		
38	Henrichy, J.,	Private, 62nd Regiment, ..	747	45		
39	Baktiwar Lal,	"	737	45		
40	Walters, J.,	Sergeant, 1-5th Regiment,	734	44		
41	Hay, J.,	Gunner, C-14, Royal Art.,	731	44		
42	Hanson, W.,	Private, 96th Regiment, ..	730	44		
43	Murphy, M.,	Sergeant, 107th Regiment,	714	43		
44	Paraswari Das,	"	704	43		
45	Jitaji Singh,	"	705	42		
46	Ghamandi Lal,	"	700	42		
47	Baboo,	"	677	41		
48	Sri Krishnadas Naido,	"	671	41		
49	Jagat Bandha Sen,	"	669	41		
50	Madama, R.,	Corporal, D-19, Royal Art.,	651	39		
51	Singh Ram,	"	639	38		
52	Lambert, H.,	Gunner, A-16, Royal Art.,	580	35		
53	Hingdon, E.,	Bombr, F-8, Royal Art.,	573	35		Failed.

1872.

No.	Name.	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.
LOWER SUBORDINATE CLASS					
(Full Marks, 1000).					
Sub-Overseers, (Military)					
1	Torab Ali,	..Sowar, 1st B C,	581	58	
2	Zamin Ali,	..Sowar, 6th B C,	582	58	
3	Amjad Ali,	..Sowar, 3rd B C,	554	55	
4	Ram Das,	..Sowar, 12th B C,	587	58	
5	Mirad Ali Khan,	..Sowar, 13th B C,	533	53	
6	Amir Mirza,	..Sowar, 6th B C,	532	53	
7	Gyas-ud-din,	..Sepoy, 51st N. I.,	471	47	
Sub-Overseers, (Civil).					
1	Choti Lal (3),	Balandshahr,	1067	107	} Higher Standard.
2	Mamta-ud-din,	Meerut,	1081	108	
3	Sander Singh,	Lahore,	1015	102	
4	Bhagat Ram,	Lahore,	984	98	} Higher Standard. Prize for Civil Engineering.
5	Lachman Das,	Unao,	831	83	
6	Dost Muhammad,	Saharanpur,	912	91	
7	Muhammad Shafi (2),	Meerut,	901	90	} Prize for Mathematics.
8	Unad Singh,	Bijnor,	987	98	
9	Shankar Lal,	Roorkee,	987	98	
10	Umar Daras,	Umballa,	899	90	
11	Churamt Lal,	Gangoh,	850	85	
12	Ralla Ram,	Khanua,	841	84	
13	Panot Mal,	Jafarwal,	839	84	
14	Abdul Hadi,	Machiwara,	811	81	
15	Durga Prasad,	Bijnor,	799	80	
16	Muhammad Shafi (1),	Meerut,	773	77	
17	Imam-ud-din,	Roorkee,	754	75	
18	Kanwar Sen,	Umballa,	733	73	
19	Bhola Singh,	Bijnor,	726	73	
20	Shib Lal,	Muzaffarnagar,	720	72	
21	Harkesh,	Roorkee,	707	71	
22	Jagannath,	Hapur,	709	71	
23	Sury-ud-din,	Bijnor,	611	61	
24	Abdul Hak,	Bijnor,	585	59	
25	Sham Lal,	Meerut,	588	59	
26	Baskar Ali,	Bijnor,	498	50	Failed.
Sub-Surveyors					
1	Harchet Singh,	Balandshahr,	1030	103	} Higher Standard. Prize for Surveying.
2	Kam Ali,	Diba,	1029	103	
3	Abdul Gaffur (1),	Nagina,	947	95	
4	Abdul Gaffur (2),	Hapur,	895	90	} Higher Standard.
5	Badi Parkash,	Saharanpur,	872	87	
6	Sobha Singh,	Khanua,	857	86	
7	Khushad Ali,	Bijnor,	839	84	
8	Kewal Kishan,	Umballa,	831	83	
9	Muhammad Ali (2),	Meerut,	794	80	
10	Balwant Ray,	Saharanpur,	790	79	

1872.

No.	Name.	Rank and Corps, and where educated.	Age	Height	Weight	Remarks.
11	Masrab Ali,	.. Bareilly,	..	758	47	
12	Blade Prasad,	.. ..	..	738	45	
13	Ganga Ram,	.. Meerut,	..	649	41	
14	Phul Singh,	.. Meerut,	..	538	37	
<i>Estimators and Draftsmen.</i>						
1	Ghori Lal (1),	.. Nagina,	..	1218	76	Higher Standard. Prizes for General Merit and Drawing.
2	Abdul Gaffar (2),	.. Mithunara,	..	1005	38	Higher Standard.
3	Ahmad Hussain,	.. Chandani,	..	965	60	
4	Muhammad Ali,	.. Umballa,	..	924	58	
5	Mowahid Ram,	.. Lahore,	..	900	56	
<i>Mistri Class.</i>						
<i>(Full Marks, 350).</i>						
1	Ghulam Muhammad,	Mason,	..	305	59	Praised as Head Artificer.
2	Nader Singh,	.. Mason,	..	183	53	
3	Ghaffar Muhammad,	Mason,	..	171	49	

1873.

ENGINEER CLASS.

(Full Marks, 5150).

1	Hawkins, R. W. L., Engrn, T.C.V.R.,	Bp. Cotton School, Simla,	2512	80	Higher Standard. Council of India Prize of Rs. 1,000. Col. Medley's Prize for Civil Engineering Prize for Drawing.
2	Graves, H. A.,	.. Lieut., Royal Artillery,	2469	78	Higher Standard. Government Prize of Rs. 1,000. Cantley Gold Medal for Mathematics. Prize for Photography, 1872.
3	Ganga Ram,	.. Lahore Government College,	2806	73	Higher standard. "The Thomson Prize" of Rs. 250. Qualified in Photography.
4	Hornle, O.	.. Basle, Switzerland,	3373	72	Higher Standard.
5	Huntress, G.,	.. La Martinière, Lucknow,	2091	66	
6	Farnant, E.,	.. Bp. Cotton School, Simla,	2053	65	
7	Fox, F. G.,	.. St. Pauline, Catterick, Yorkshire,	1970	63	Higher Standard. Col. Mac-lagan's Prize for Physical Science.
8	Higgins, A. F.,	.. Rev. H. Sells, Massachusetts,	1959	62	Higher Standard.
9	Corrigan, E. A. L.,	.. La Martinière, Lucknow,	1952	62	
10	Jones, A. J. P., Lieut. T.O.V.R.,	.. England and Rev. H. Sells, Massachusetts,	1916	61	Higher Standard. Thomson Gold Medal for best Design.
11	Kenny, E. E.,	.. Lieut., 56th Regiment,	1871	59	Qualified in Photography.
12	Balmukund,	.. Lahore Government College,	1868	58	Has Kunhya Lal's Prize of Rs. 50.
13	Lamb, G. F.,	.. St. Paul's, Stony Stratford,	1891	58	
14	Freemant Ghosh,	.. Serampur College,	..	1705	54
15	Grant, A.,	.. Scotland and Rev. H. Sells, Massachusetts,	1637	52	

1873.

No.	Name.	Rank and Corps, and where educated.	Mark obtained	Remarks.
16	Bidhu Bhanna Bhowa,	Pres. College, Calcutta, ..	1588/50	
17	Hogus, J.	By Cotton School, Sumis,	1672/50	
18	Parbata Charan Chatterjee,	Pres. College, Calcutta, ..	1505/48	
UPPER SUBORDINATE CLASS. (Full Marks, 1880).				
1	Hay, W.,	Private, 1-5th Regiment, ..	1511/85	Higher Standard Prices for General Men, Surveying and Drawing Qualified in Photography
2	McGraw, H.,	Private, 1-11th Regiment,	1291/83	Higher Standard Prices for Mathematics and Civil Engineering.
3	Boardman, P.,	Private, 1-11th Regiment,	1176/76	Higher Standard
4	Smith, J.,	Private, 86th Regiment, ..	1140/74	Higher Standard
5	Jay Narayan,	Private, 1-3rd Regiment, ..	1130/73	Higher Standard
6	Batsheloor, W.,	Ag. Bombr, B-F, R H A.	1124/73	Qualified in Photography
7	Robertson, W.,	Lance-Corpl, 15th Hussars,	1079/70	
8	Lewis, C.	Private, 21st Hussars, ..	1077/69	Higher Standard
9	McDowell, A.,	Private, 1-11th Regiment,	1048/68	
10	O'Connor, T.,	Gunner, F-16, Royal Arty.	1039/67	
11	Watson, J.,	Private, 92nd Regiment, ..	1024/66	Higher Standard Prices for Photography.
12	Kirk, D.,	Private, 58th Regiment,	1019/66	Higher Standard.
13	Bell, J.,	Private, 85th Regiment,	1009/65	
14	Barber, J.,	Staff Sergeant, 25th B. A.,	982/64	
15	Rutherford, T.,	Corporal, 65th Regiment,	967/62	Higher Standard Qualified in Photography
16	Lean, H.,	Private, 91st Hussars, ..	961/62	Higher Standard
17	Brown, J.,	Gunner, D-18, Royal Arty.	945/61	
18	Campbell, J.,	Private, 4th Hussars, ..	939/60	
19	McCarthy, L.,	Private, 2-25th Regiment,	919/59	
20	Hardeo Das,	Private, 4th Hussars, ..	907/58	
21	Bird, G.,	Private, 2-25th Regiment,	898/58	
22	Crofton, M. D.,	Private, 4th Hussars, ..	890/57	
23	Mahim Chandra Gupta,	Private, 4th Hussars, ..	879/57	Qualified in Photography.
24	Bidhu Boshom Ban- dyopadhyay,	Private, 4th Hussars, ..	877/57	
25	Adamson, J.,	Private, 4th Hussars, ..	864/56	
26	Doulet Ram,	Private, 4th Hussars, ..	860/55	
27	Kundan Lal,	Private, 4th Hussars, ..	858/55	
28	Collins, T.,	Bombr, 1-18, Royal Arty.,	848/55	
29	Bans Gopal,	Private, 4th Hussars, ..	848/55	
30	Brij Behari Lal,	Private, 4th Hussars, ..	838/54	
31	Jagdishranath Sircar,	Private, 4th Hussars, ..	838/54	
32	Kam Lal Mukhop- dhyay,	Private, 4th Hussars, ..	827/53	
33	Mahes Chandra Ban- dyopadhyay,	Private, 4th Hussars, ..	826/53	
34	Rand Mishra,	Private, 4th Hussars, ..	818/53	
35	Craig, J.,	Private, 55th Regiment, ..	798/51	
36	Jagg, T.,	Private, 55th Regiment, ..	786/51	

1873.

No.	Name.	Rank and Corps and where obtained.	Marks obtained.	Percent.	Remarks.
36	Hughes, E.,	Corporal, C-8, Royal Arty.	789	51	
38	Beatty, A.,	Lance-Corpl, 3-19th Regt.	781	50	
39	Behari Lal,	...	766	49	
40	Moore, G.,	Gunner, F-18, Royal Arty.	717	46	
41	Bhim Chandra Saha,	...	712	45	
42	Rama Chandra Zandya-padhya,	...	693	43	
43	Miran Baksh,	...	680	42	
44	McDonald, J.,	Corporal, C-16, Royal Arty.	679	42	
45	Rohoda Chandra Chatterpadhyaya,	...	663	40	
46	Isht Pashad,	...	678	37	Failed.
LOWER SUBORDINATE CLASS					
(Full Marks, 1600)					
Sub-Overseers, (Military)					
1	Dewi Datta,	Duffadar, 18th B Co.,	1119	70	Higher Standard. Prize for Civil Engineering
2	Khewun Singh,	Sowar, 11th B L.,	935	51	
3	Abbas Khan,	Sowar, 19th B L.,	788	49	
4	Barkat Ullah Khan,	Sowar, 19th B Co.,	796	49	
5	Hussun Shah,	Duffadar, 19th B L.,	748	46	
6	Bakhawat Hussain,	Sowar, 2nd B Co.,	711	44	
7	Chanda Singh,	Sepoy, 4th N L.,	591	36	
8	Aswat Ram,	Sepoy, B. and M.,	552	35	
9	Sukender Khan,	Sowar, 2nd B Co.,	545	34	
10	Utter Singh,	Sowar 11th B L.,	531	21	Failed
Sub-Overseers, (Civil).					
1	Kashi Ram,	Kartarpur,	1148	72	Higher Standard. Prize for General Merit.
2	Hazara Singh,	Lahore,	1123	70	
3	Nand Singh,	Ladhiana,	1097	69	
4	Mobarak Beg,	Pattighat, Lahore,	1089	68	Higher Standard.
5	Jaggannath,	Khatpur,	1067	67	
6	Bakar Hussain (I),	Meerut,	1064	67	
7	Amir Ah,	Najafgarh,	1058	66	Higher Standard. Prize for Surveying.
8	Ram Rock Pal,	Najafgarh,	983	61	
9	Nisar Ahmad Khan,	Jalalabad,	961	61	Higher Standard.
10	Avas Ah,	Meerut,	972	61	
11	Behari Lal,	Phulodah,	954	60	
12	Champer Ray,	Najafgarh,	930	58	
13	Ashraf Hussain,	Meerut,	921	58	
14	Chinraj Lal,	Roorky,	914	57	
15	Ramesh Singh,	Najafgarh,	902	56	
16	Ram Dhar,	Moradabad,	897	56	
17	Bichamber Dayal,	Lucknow,	887	55	
18	Gubari Lal,	Farakhabad,	849	53	
19	Ganga Sahay,	Meerut,	807	50	
20	Badrana Ram,	Ladhiana,	808	50	
21	Amrit Ray,	Baharanpur,	770	48	
22	Ram Kishore,	Ambala,	754	47	

1873

No.	Names.	Rank and Corps, and where educated.	Rank obtained	Percent	Remarks.
23	Khambad Hingan,	.. Muzaffarnagar,	..	744/47	
24	Ashau Ali,	.. Meerut,	..	733/45	
25	Badrin Das,	.. Roorkes,	..	708/44	
26	Tri Ram,	.. Roorkes,	..	701/44	
27	Muhammad Ismail,	.. Saharanpur,	..	680/43	
28	Chajja Mal,	.. Ambala,	..	668/42	
29	Shama-ud-din,	.. Roorkes,	..	666/42	
30	Tulsi Ram,	.. Saharanpur,	..	639/39	
31	Yusuf Ali,	.. Nithor,	..	620/39	
32	Bakur Hussain (2),	.. Bijnor,	..	585/37	
33	Shiv Dial,	.. Roorkes,	..	561/36	Failed
34	Janki Pershad,	.. Benares,	..	323/14	
<i>Nagri Class.</i>					
1	Badrin Das,	.. Farukhabad,	..	874/55	
2	Rasool Singh,	.. Meerut,	..	821/51	
3	Deoki Nandan,	.. Muzaffarnagar,	..	680/41	
4	Tulsi Ram (2),	.. Roorkes,	..	655/41	
5	Rishi Lal,	.. Roorkes,	..	585/37	
<i>Estimators and Draftsmen</i>					
1	Fazl Muhammad,	.. Luckhna,	..	1185/74	Higher Standard. Prize for Mathematics.
2	Ralla Ram,	.. Luckhna,	..	1174/73	Higher Standard. Prize for Drawing.
3	Mohammad Umar,	.. Saharanpur,	..	939/69	
4	Kawal Nain,	.. Gangoh,	..	873/55	
<i>Misiri Class.</i>					
<i>(Full Marks, 350)</i>					
1	Ram Bhaj,	..	..	165/47	Passed as Head Artificer

1874

ENGINEER CLASS.

(Full Marks, 3150)

1	Reid, A. J. F.,	.. Lieut., 20th P N Infantry,	Passed out on 9th March, 1874, and posted to Bengal for Familee Work.
2	Peterson, V. B.,	.. La Martinière, Lucknow,	..	..
3	Shiv Dayal, B.A.,	.. Govt. College, Lahore,	..	..
4	Jarnata, S.,	.. Sp. Cotton School, Smia,	..	..
5	McLaughlin, F. J.,	.. Birmingham & Rev H. Sells,	..	..
6	Ram Dayal, B.A.,	.. Govt. College, Lahore,	..	..
7	Gwyther, H. T.,	.. La Martinière, Calcutta,	..	..
8	Adie, A. R.,	.. La Martinière, Lucknow,	..	..
9	Baba Mal, B.A.,	.. Govt. College, Delhi,	..	..
10	Smith, H. G. F.,	.. St. Xavier's, Calcutta,	..	..
11	Mahendronath Mukhopadhyay,	.. Presidency College, Calcutta,	..	..
12	Campbell, R. L.,	.. Munceor School,	..	..

* Qualified in Photography

1874.

No.	Name.	Rank and Corps, and where educated.	Age	Percent	Remarks.
1	McLaughlin, W T,	Lieut., 49th Regiment,	2313	73	Higher Standard Government Prize of Rs. 1,000 Thompson Gold Medal for best Design, Col. Medley's Prize for Civil Engineering Genl. Macdonald's Prize for Physical Science. Prize for Drawing Prize for Photography, 1873
2	Moore, F., Lieut., T C	By Cotton School, Simla,	1908	60	
3	William, J H, Esq., T C V R,	La Martinière, Calcutta,	1687	60	Surveying Prize, presented by R B Smart Esq. Qualified in Photography
4	Smart, O G,	Edinburgh & Rev H Sells,	1842	58	Qualified in Photography.
5	Dodsworth, A T,	Mumoorie School,	1736	56	
6	Jagdis Ray,	Govt. College, Delhi,	1709	54	Raj Kshatya Lal's Prize of Rs. 50.
7	Deane, G K,	Lieut., 4th Hussars,	1765	54	Qualified in Photography
8	McLaughlin, R H,	Birmingham & Rev H Sells	1640	53	
9	Beale, B. W,	Royal Naval School, London, and Rev H Sells,	1578	50	
10	Fleming, C,	By Cotton School, Simla,	1541	49	
11	Sagar Mal,	Govt. College, Lahore,	1512	46	
12	Shankh Khar Ahmad,	High School, Gauhati, Assam,	1508	45	Qualified in Photography
13	Scottland, W,		1502	45	
14	Rose, A E,	Rev. H. Sells, Mumoorie,	1426	45	Failed
UPPER SUBORDINATE CLASS					
(Full Marks, 1800)					
1	Warburton, J,	Sergeant, H-8, Royal Arty.	1061	76	Higher Standard Prize for General Merit. Qualified in Photography.
LOWER SUBORDINATE CLASS					
(Full Marks, 1600)					
Sub-Officers, (Military).					
1	Abdul Rahim,	Sowar, 3rd B. C,	856	54	
2	Lal Khan,	Sowar, 6th B. C,	811	51	
3	Chitni Lal,	Sowar, 3rd B. C,	794	50	
4	Narayan Singh,	Sowar, 7th B. C,	768	48	
5	Sarmuk Singh,	Sowar, 7th B. C,	654	41	
6	Mustafin Khan,	Sepoy, 16th N I,	580	36	
7	Karir Hussain,	Sowar, 6th B. C,	572	36	
8	Nihal Singh,	Sepoy, 42nd N I,	507	32	
9	Chanda Singh,	Sepoy, 34th F N I,	493	31	
Sub-Officers, (Civil).					
1	Nattho Mal,	Assam,	...	...	Passed out on 18th March, 1874, and posted to Bengal for Famine Works.
2	Nadir Lal,	Shandarnabed,	...	...
3	Mahammed Hussain Beg,	Kalsour,	...	...
4	Agbar Ali,	Meerut,	...	...
5	Forehand Ali,	Meerut,	...	...
6	Zahar Ahmad,	Deoband,	...	...

1874-

No.	Names.	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.
1	Bal Sarup,	.. Sikandarabad,	1118	70	Higher Standard. Prize for General Merit.
2	Gobind Sahay,	.. Sikandarabad,	1104	68	Higher Standard
3	Mohammad Ibrahim,	.. Saharanpur,	1049	66	Higher Standard Prize for Surveying.
4	Ram Prasad (1),	.. Sikandarabad,	1030	64	Higher Standard
5	Prabhu Dayal,	.. Saharanpur,	977	61	Higher Standard Prize for Mathematics.
6	Prabhu Lal,	.. Diba,	967	60	Higher Standard.
7	Bal Kishan,	.. Bulandshahr,	941	59	
8	Nagar Mal,	.. Deoband,	940	59	
9	Mari Singh,	.. Sardhana,	939	59	
10	Prem Singh,	.. Goyanwala,	927	58	Prize for Civil Engineering.
11	Wala Hussain,	.. Sikandarabad,	918	57	
12	Hussain Bakhsh,	.. Roorkhee,	914	57	
13	Mithu Lal,	.. Bulandshahr,	911	57	
14	Norata Ram,	.. Khannag,	908	57	
15	Sing Ram,	.. Diba,	907	57	
16	Ramannand,	.. Bareilly,	891	57	
17	Zenat Ray,	.. Roorkhee,	878	56	
18	Sukhan Lal,	.. Meerut,	871	54	
19	Khan Chand,	.. Bulandshahr,	857	52	Prize for Drawing
20	Isayut Ali,	.. Bareilly,	851	52	
21	Har Prasad,	.. Roorkhee,	850	52	
22	Abdur Rahman,	.. Ludhiana,	836	52	
23	Bhoj Raj,	.. Bulandshahr,	825	52	
24	Janki Prasad,	.. Sikandarabad,	811	51	
25	Ram Prasad (3),	.. Meerut,	787	49	
26	Sukdeo Mal,	.. Najibabad,	785	49	
27	Nasir-ud-din,	.. Bijnor,	774	48	
28	Samad Ali Khan,	.. Muzaffarnagar,	763	47	
29	Munni Lal,	.. Sikandarabad,	763	46	
30	Kesho Ram,	.. Dera Ghazi Khan,	726	45	
31	Hira Lal,	.. Muzaffarnagar,	707	44	
32	Nasrullah Khan,	.. Agra College,	681	43	
33	Bansi Lal,	.. Deoband,	680	41	
34	Shankar Lal,	.. Muzaffarnagar,	630	39	
35	Ram Lal,	.. Bulandshahr,	600	36	
Nagri Class.					
1	Lachmi Datta,	.. Faori,	983	61	Higher Standard
2	Ganeshi Lal,	.. Meerut,	897	56	
3	Rala Nand,	.. Faori,	812	51	

1875.

ENGINEERS CLASS.
(Full Marks, 3250).

1	TOOM, R. W. L.,	.. La Martinière, Lucknow,	2542	78	Higher Standard Council of India Prize of Rs. 1,000 Cayley Gold Medal for Mathematics, Genl MacLagan's Prize for Physical Science. Qualified in Photography
---	-----------------	----------------------------	------	----	---

1876.

No.	Name.	Rank and Corps, and where educated	Mathematics	General	Remarks
2	Green, W. J.,	.. England,	.. 3233	71	<i>Higher Standard.</i> Thomson Gold Medal for best Design Col Medley's Prize for Civil Engineering. Mr Smart's Prize for Surveying Prize for Drawing Prize for Photography, 1874
3	Mahendranath Chakravarti, B.A.,	Queen's College, Benares, ..	3813	71	<i>Higher Standard.</i> The Thomson Prize of Rs 250 Qualified in Photography.
4	Kumby, B. J.,	.. Bp Cotton School, Simla	2173	67	<i>Higher Standard.</i> Lieutenant Maycock's Prize for Mechanism. Qualified in Photography.
5	Chakrabarti, A. T.,	.. St. Xavier's, Calcutta.	3455	62	<i>Higher Standard.</i> Qualified in Photography
6	Shradatta Pande, B.A.,	Queen's College, Benares,	1862	57	Rai Kunhya Lal's Prize of Rs. 50
7	Lalcha Rama Saini,	Govt. College, Lahore.	1892	46	
8	Lilley, H. A.,	.. La Martinière, Lucknow, ..	1733	56	} Qualified in Photography.
9	Gilbert, W. M.,	.. Bp Cotton School, Simla,	1739	54	
10	Mason, W.	.. Mussoorie School, ..	1719	53	
11	Nelson, H. H.,	.. Rev H Bells, Mussoorie,	1679	53	} Qualified in Photography.
12	Dharm Singh Bora,	.. Govt College, Lahore. ..	1635	51	
13	Evans, A. C.,	.. Bp Cotton School, Simla,	1646	51	
14	Greenwood, J. A.,	.. Wood's Academy, Mussoorie	1590	49	
15	Concannon, T.,	.. Wood's Academy, Mussoorie	1583	49	
16	Neville, G. W.,	.. La Martinière, Lucknow, ..	1573	48	
17	Sanon, C. E.,	.. St. George's, Mussoorie, ..	1531	48	
18	Townsend, J.,	.. Bp Cotton School, Simla,	1545	48	
19	Hine, C. W.,	.. Bp Cotton School, Simla,	1481	44	} Failed
20	Copeland, D.,	.. Wood's Academy, Mussoorie,	1346	41	
UPPER SUBORDINATE CLASS.					
(For Marks, 1900)					
1	Anderson, A.,	.. Private, 92nd Regiment, ..	1351	82	<i>Higher Standard.</i> Prize for General Merit, Mathematics, Civil Engineering and Surveying
2	Leamouth, A.,	.. Private, 92nd Regiment, ..	1365	80	<i>Higher Standard.</i> Prize for Photography
3	Miller, H.,	.. Lawrence Asylum, Mount Abu,	1228	72	} <i>Higher Standard.</i>
4	Somers, F.,	.. Corporal, 40th Regiment, ..	1228	72	
5	Swann, V. H.,	.. Lieut-Corpl., 4th Hussars, ..	1228	72	
6	Logan, R.,	.. Lieut-Sergt., 1-st Regt.,	1203	71	<i>Higher Standard.</i> Qualified in Photography.
7	Hay, A. L.,	.. Bdr, A-F, R H Artillery,	1193	70	} <i>Higher Standard.</i>
8	Shah Mahammad,	.. Govt. School, Amritsar, ..	1123	67	
9	DeLange, J. A.,	.. Lance-Corpl., 89th Regt., ..	1107	65	
10	Williams, C.,	.. Lieut-Corpl., 40th Regiment,	1098	65	} Prize for Drawing Qualified in Photography
11	Morrison, J.,	.. Private, 1-st Regiment, ..	1073	63	
12	Clifford, W. H.,	.. Lance-Sergt., 48th Regt., ..	1049	62	
13	Shamsher Singh,	.. Dehra Mission School, ..	1047	62	
14	Canner, J. A.,	.. Calcutta Boys' School, ..	1018	60	

1875.

No.	Names.	Rank and Corps, and where educated	Marks gained	Percent.	Remarks.
15	Mohan Lal,	.. Bareilly College,	949	56	
16	Holt, C.,	.. Lance-Sergeant, 2nd Regt.,	946	56	
17	Bhagwan Das,	.. Government College, Delhi,	934	55	
18	Chandani Lal,	.. Government College, Delhi,	931	55	
19	Kamichander Bandya-				
	padhyay,	.. Govt. College, Lahore,	896	53	
20	Ram Sarup,	.. Govt. College, Aligarh,	875	52	
21	Marten, J. L.,	.. Munro's School,	875	52	
22	Fletcher, L.,	.. Private, 2-60th Rifles,	832	48	
23	Burke, J.,	.. St. Fidelis Schl., Missions,	794	47	
LOWER SUBORDINATE CLASS.					
<i>(Full Marks, 1000).</i>					
<i>Sub-Officers, (Military).</i>					
1	Ali Mohammad,	.. Sepoy, 8 and M.,	784	49	
2	Ram Singh,	.. Sowar, 7th B. C.,	758	47	
3	Narayan Singh,	.. Sowar, 12th B. C.,	749	47	
4	Karn Singh,	.. Sowar, 7th B. C.,	734	46	
5	Nidhan Singh,	.. Sowar, 5th B. C.,	689	43	
6	Maha Singh,	.. Sepoy, 8 and M.,	626	38	
<i>Sub-Officers, (Civil).</i>					
<i>Upper Class.</i>					
1	Ram Chandra,	.. Sikandrabad,	1149	79	<i>Higher Standard</i> Prizes for General Merit and Surveying.
2	Ram Lal,	.. Deoband,	1135	71	<i>Higher Standard</i> Prizes for Civil Engineering, Drawing & Second Prize for Surveying.
4	Dabhi Prasad,	.. Bulandshahr,	1100	69	<i>Higher Standard</i> Prize for Mathematics.
5	Kashan Chand,	.. Ludhiana,	1079	67	
6	Shama-ud-din,	.. Bijnor,	1068	66	
7	Fakir Chand (3),	.. Baraut,	1029	64	
8	Shankar Lal,	.. Nagina,	1022	64	
9	Amba Prasad,	.. Sikandrabad,	1020	64	
11	Ladli Prasad,	.. Kairana,	1008	63	
12	Javed Hussain,	.. Agra,	1006	62	
13	Jawahir Singh,	.. Amritsar,	1005	63	
14	Kaithal Ram,	.. Ludhiana,	1002	62	
15	Mamaddi Lal,	.. Roorkee,	994	62	
16	Dwarka Prasad,	.. Nidhar,	988	60	
17	Shambhat Das,	.. Baraut,	984	60	
18	Fakir Chand (1),	.. Deoband,	981	61	
19	Banarsi Das,	.. Bardhaman,	966	60	
20	Choti Lal,	.. Chandpur,	960	60	
21	Muntes Hussain,	.. Kaimganj,	948	58	
22	Chunji Mal,	.. Saharanpur,	938	58	
24	Falsai Hussain,	.. Meerut,	918	57	
25	Kodari Lal,	.. Nagina,	908	56	
26	Kodarnath (1),	.. Bijnor,	902	56	

1875.

No.	Name.	Rank and Corps, and where educated.	Marks obtained.	Percent.	Remarks.
36	Muhammad Ali,	.. Nagina,	..	808 56	
37	Kishan Lal,	.. Najibabad,	..	898 56	
38	Jwala Prasad,	.. Bijoor,	..	894 56	
39	Radha Kishan,	.. Modliana,	..	882 56	
40	Rish Lal,	.. Ludhiana,	..	880 55	
41	Bhup Singh,	.. Muzaffarnagar,	..	868 54	
42	Samsahi Lal,	.. Sikanderabad,	..	851 53	
43	Banwari Lal,	.. Deotand,	..	838 52	
44	Loti Ram,	.. Saharanpur,	..	803 50	
45	Bhiv Dayal,	.. Muzaffarnagar,	..	798 50	
46	Narayan Singh,	.. Jabalpur,	..	788 49	
47	Ugar Sen,	.. Ludhiana,	..	783 49	
48	Abdur Rasak,	.. Karnal,	..	757 47	
49	Rup Ram,	.. Farnak,	..	726 46	
44	Muhammad Ismail,	.. Nagina,	..	700 44	
<i>(Nagya Class)</i>					
8	Indur Man,	.. Aligarh,	..	1127 70	Higher Standard
10	Kesho Ram,	.. Najibabad,	..	1014 64	
21	Kedar Nath,	.. Muzaffarnagar,	..	948 59	
35	Hari Singh,	.. Baraut,	..	880 59	
36	Pagar Mal,	.. Meerut,	..	828 52	
42	Badrabau,	.. Kaimghar,	..	738 46	
<i>Estimators and Draftsmen.</i>					
<i>(Full Marks, 1545).</i>					
1	Zahur Ahmad,	.. Ambala,	..	862 56	
2	Ahmad Beg,	.. Saharanpur,	..	568 37	
<i>Draftsmen.</i>					
<i>(Full Marks, 400).</i>					
1	Mulchand,	..	..	248 01	

1876.

ENGINEER CLASS

(Full Marks, 3250).

1	Krishnachandra Ben- dyopadhyay, B.A., ..	Queen's College, Benares,	2200 70	Higher Standard Council of India Prize of Rs 1000. The Thomson Prize of Rs. 250. Qualified in Photography.
2	Granville, H., ..	La Martinière, Lucknow, ..	2268 70	Candley Gold Medal for Mathematics. Capt Cunningham's Prize for Applied Mathematics.
3	Macdonald, W., ..	High School, Southampton,	2223 68	Higher Standard Col Medley's Prize for Civil Engineering. Qualified in Photography.

1876.

No.	Name.	Rank and Corps, and where educated.	Marks	Percentage	Remarks.
4	Hosaden, C.E., <i>Ensign, T.C.V.R.</i> , ..	Mussoorie School,	2152	68	<i>Higher Standard.</i> General MacLagan's Prize for Physical Science.
5	Gwyther, W.B., ..	La Martinière, Calcutta, .	2148	68	Prize for Drawing.
6	DeMello, C.H., ..	Bp. Cotton School, Simla, .	2090	65	
7	Grant, H.B., <i>Lieut., T.C.V.R.</i> , ..	Mussoorie School,	2045	63	<i>Leaut. Maycock's Prize for Mechanism.</i> Prize for Photography, 1875
8	Bakshi Rām Singh, ..	Canning College, Lucknow,	1855	60	Raj Bahadur Kumbha Lal's Prize of Rs. 50. Qualified in Photography
9	Anthony, H.B., ..	Bp. Cotton School, Simla, .	1900	59	
10	Woodroffe, F.M., ..	La Martinière, Lucknow, .	1899	59	Qualified in Photography.
11	Renther, A.M., ..	Esslingen (Wurtemberg), and Rev H Sella, Mussoorie,	1891	57	
12	Evans, L.J.S., ..	Alexandria, and Rev H Sella, Mussoorie, .	1818	56	Thomason Gold Medal for best Design.
13	Green, W.M., ..	Wood's Academy, Mussonone, .	1768	54	
14	Prayaga Saha, B.A., ..	Queen's College, Bouares, .	1780	53	
15	Rip Chand, ..	Govt and Mission Schools, Lahore, .	1730	53	
16	Roche, C.M.S., ..	Dorseton Col., Calcutta, and Rev. H Sella, Mussoorie, .	1683	52	
17	Trailokynath Mukhopadhyay, ..	Govt. College, Lahore, .	1638	51	
18	Hine, C.W., ..	Bp. Cotton School, Simla, .	1551	48	
UPPER SUBORDINATE CLASS					
(Full Marks, 1700).					
1	Martin, W., ..	Gunner, E 11, B Artillery, .	1280	75	<i>Higher Standard.</i> Prizes for General Merit and Civil Engineering
2	Chandan Gopal, ..	Mission School, Meerut, ..	1229	73	<i>Higher Standard.</i> Prizes for Mathematics and Drawing
3	Ottewill, W.J., ..	Lee-Corpl, 1st Regt, ..	1128	66	<i>Higher Standard.</i> Prizes for Surveying Qualified in Photography
4	Morgan, A.B., ..	Lee-Sergt, 1-4th Regt, ..	1126	66	Captain Cunningham's Prize for Applied Mathematics.
5	Stacey, W.C., ..	Private, 65th Regiment, ..	1121	66	<i>Higher Standard</i>
6	Mahony, J., ..	St. Felix' Schl, Mussoorie, .	1120	66	
7	Cooper, C.W.E., ..	La Martinière, Lucknow, ..	1117	66	<i>Higher Standard.</i> Qualified in Photography.
8	Mays Das, ..	Mission School, Lahore, ..	1108	65	
9	Sharpe, H.J., ..	Private, 40th Regiment, ..	1093	65	Prize for Photography.
10	Beach, O., ..	Lee-Corpl, 40th Regt, ..	1057	62	Key Memorial Prize for Estimating
11	Daly, T.W., ..	La Martinière, Lucknow, ..	1040	61	
12	Edden, J., ..	Lee-Corpl, 2-60th Rifles, .	983	58	
13	Rail Charan Sen, ..	Engineering Col., Calcutta, .	974	57	
14	Amar Singh, ..	St. Stephen's College, Delhi, .	968	57	

1876.

No.	Name.	Rank and Corps, and where educated.	Marks obtained.	Remarks.
15	Litchfield, J.	Private, 4th Hussars, ..	958/58	
16	Rayner, G. W.	La Martinière, Calcutta, ..	945/56	
17	Dargie, J.	Lee-Corpl, 51st Regt., ..	927/55	
18	Sealy, G. A.	Private, 55th Regiment, ..	900/53	
19	Corkery, J.	St. Fidele's Schk, Mascoutie, ..	884/52	
20	Cloy, E.	Lee-Corpl, 51st Regt., ..	880/50	Qualified in Photography.
21	B. Bisheu Singh,	Mission School, Amritsar, ..	830/50	
22	Thompson, B.	Lee-Sergt., 40th Regt., ..	848/50	
23	Beneda Behari Ban- dyopādhyāy,	London Mission Soc. Inst., Calcutta, ..	539/49	Will be given Certificates as Overseers if favourably reported on at end of Apprentices year.
24	Miran Bakhsh,	Govt. School, Gujrat, ..	806/48	
25	Foley, J.	Lee-Corpl, 88rd Regt., ..	801/47	

LOWER SUBORDINATE CLASS.

(Full Marks, 1000).

Sub-Overseers, (Military)

1	Amar Singh,	.. Sowar, 7th B. C., ..	1099/69	Higher Standard
2	Dewan Singh,	.. Sowar, 1st C. I. H., ..	1090/64	
3	Gobind Sahay,	.. Sowar, 12th B. C., ..	862/54	
4	Prian Sakh,	.. Sowar, 14th B. L., ..	858/54	
5	Hakam Chand,	.. Sowar, 12th B. C., ..	811/51	
6	Bawaldia,	.. Sepoy, B and M., ..	705/44	
7	Nit Ram,	.. Sowar, 19th B. L., ..	692/43	
8	Mukta Prasad,	.. Sepoy, 3rd Regt., B. L., ..	555/35	Failed
10	Abdul Rahman,	.. Sowar, 19th B. L., ..	349/23	Remanded

Sub Overseers, (Civil)

(Urdu Class)

1	Thakur Dás,	.. Ludhiana,	1218/76	Higher Standard	Prizes for General Merit, Civil Engineering and Drawing.
2	Kaboor Lal,	.. Meeranagar,	1160/75		
3	Bazma Ram,	.. Ludhiana,	1096/68	Higher Standard	Prize for Surveying
4	Lakshpat Ray,	.. Sakandrabad,	1080/69		
5	Bedri Prasad,	.. Bulandshahr,	1084/68	Higher Standard.	Prize for Mathematics.
6	Banwari Dás,	.. Najibabad,	1081/68		
7	Rahim Bakhsh,	.. Saharanpur,	1069/67		
8	Pritam Dás,	.. Gwalior,	1063/66		
10	Ramji Lal,	.. Rohtak,	1039/65		
11	Bágar Mal,	.. Boorkee,	1016/64		
12	Lala Bám,	.. Ludhiana,	1014/64		
13	Jawahir Lal,	.. Bulandshahr,	993/63		
14	Mokand Singh,	.. Ludhiana,	985/62		
15	Shib Sahay,	.. Meeranagar,	982/62		
16	Akumad Hussain,	.. Bijnor,	980/62		
18	Gopal Chand,	.. Meeranagar,	978/61		
19	Jaggannath,	.. Garhwal,	975/61		

1876.

No.	Names.	Rank and Corps, and where educated.	Mark secured.	Percent.	Remarks.
21	Inayat Ali,	.. Nagina,	.. 972	61	
22	Mohar Singh,	.. Deoband,	.. 959	60	
23	Ganga Ram,	.. Badam,	.. 945	59	
24	Aladya,	.. Saharanpur,	.. 945	59	
25	Ganga Sahay,	.. Musaffarnagar,	.. 939	59	
26	Wahid Bag,	.. Andpeshahr,	.. 939	59	
27	Muhammad Ibrahim,	.. Saharanpur,	.. 937	59	
28	Ram Prasad,	.. Bulandshahr,	.. 929	58	
29	Dabi Sahay,	.. Musaffarnagar,	.. 927	58	
30	Fateh Chand,	.. Meerut,	.. 922	58	
31	Chaudan Singh,	.. Delhi,	.. 915	57	
32	Abdur Rahman (1),	.. Karnal,	.. 910	57	
33	Muhammad Hadi,	.. Lucknow,	.. 899	56	
34	Abdur Razzak,	.. Bijnor,	.. 886	55	
35	Bakhtwar Singh,	.. Saharanpur,	.. 885	55	
36	Ashraf Ali,	.. Bulandshahr,	.. 883	55	
37	Nabi Baksh (1),	.. Moradabad,	.. 867	54	
38	Harnam Singh,	.. Saharanpur,	.. 867	54	
39	Bauwari Lal,	.. Saharanpur,	.. 860	54	
40	Wahid Khan,	.. Sikandrabad,	.. 850	53	
41	Haneri,	.. Roorkee,	.. 845	53	
42	Abdur Rahman (2),	.. Bijnor,	.. 842	53	
43	Hargi Lal,	.. Bijnor,	.. 831	51	
44	Jafr Ah,	.. Bijnor,	.. 738	46	Failed
(Nagri Class)					
7	Ganga Ram,	.. Ahgarh,	.. 1074	67	Higher Standard.
17	Sitig Ram,	.. Garhwal,	.. 964	63	
19	Budri Datta,	.. Garhwal,	.. 975	61	
37	Ganesn Lal,	.. Ahgarh,	.. 872	55	
Draftsmen.					
(Full Marks, 350)					
1	Haji Nabi Baksh,	.. Roorkee,	.. 230	66	
2	Yusef Ah,	.. Bijnor,	.. 185	53	

1877.

ENGINEER CLASS.

(Full Marks, 3250).

1	Farwant, J T,	.. Up. Cotton School, Simla,	2438	77	Higher Standard. Council of India Prize of Rs 1,000. Cassin's Gold Medal for Mathematics. Col. Medley's Prize for Civil Engineering. Capt. Cunningham's Prize for Applied Mathematics. Qualified in Photography.
---	---------------	------------------------------	------	----	--

1877.

No	Name	Rank and Corps, and where educated.	Age	Mark	Remarks
2	Bagley, W. A.,	..Mun. Central College, Al- lahabad, ..	2219	68	<i>Higher Standard</i> General Maclean's Prize for Experi- mental Science. Qualified in Photography.
3	Bansley, B. C.,	..Godolphin School, London, & La Martinière, Lucknow,	2181	66	Thomason Gold Medal for best Design. Prize for Drawing. Lieut. Maycock's Prize for Mechanism. Prize for Pho- tography, 1876.
4	Swinton, W. A. R.,	..Sp. Cotton School, Simla,	1863	60	Qualified in Photography.
5	Foy, E.,	..La Martinière, Lucknow, ..	1916	59	
6	Mohan Lal Kishan,	..Govt. College, Bareilly, ..	1900	59	Rai Bahadur Kunhya Lal's Gold Medal.
7	Sohan Lal,	..Government College, Agra,	1843	57	
8	Raman Nath,	..Government College, Delhi,	1813	56	
9	Seaman, C.,	..Wood's Academy, Mussoorie,	1722	53	
10	Mitchell, H. F.,	..Wood's Academy, Mussoorie,	1629	52	Qualified in Photography.
10	Tahar Dás,	..Govt. College, Lahore, ..	1693	52	
12	McHutton, A. M.,	..La Martinière, Lucknow,	1529	47	Sailed.
UPPER SUBORDINATE CLASS.					
(Full Marks, 1700)					
1	Sullivan, A.,	..Drummer, 40th Regiment,	1415	83	<i>Higher Standard</i> Prizes for General Merit, Civil Engi- neering, 'Key Memorial' Prize for Estimating, and Capt. Cunningham's Prize for Applied Mathematics. Qualified in Photography.
2	Thomas, A.,	..Lance-Corpl, 8rd Hussars,	1552	80	<i>Higher Standard</i> Prizes for Drawing and Photography and Major Brandreth's Prize for Note Books.
3	O'Neill, J.,	..Lance-Sergt, 83rd Regt., ..	1800	77	<i>Higher Standard</i> Prize for Surveying. Qualified in Pho- tography.
4	Edmonds, A.,	..Snd Corpl, Royal Engns., ..	1282	76	<i>Higher Standard</i> Qualified in Photography.
5	Clarke, A. H.,	..Private, 10th Hussars, ..	1291	75	<i>Higher Standard</i> Prizes for Mathematics.
6	Quae, M.,	..Sergt, 1-18, Royal Arty., ..	1247	73	
7	Lockyer, E.,	..Corpl, B-8, Royal Arty., ..	1102	65	<i>Higher Standard.</i>
8	Robinson, H. E.,	..Sergt, F-11, Royal Arty., ..	1098	65	
9	Anderson, A. T.,	..Lawrence M. A., Benapur,	1070	63	<i>Higher Standard</i> Qualified in Photography.
10	Smith, C. F.,	..Ep. Cotton School, Simla,	1068	63	
11	Fitzgerald, W.,	..Sergeant, 59th Regiment, ..	1057	62	<i>Higher Standard.</i>
12	Agar, W. C.,	..Lance-Sergt, 81st Regt., ..	1053	62	
13	Prasanna Kumar Dutta,	..Metropole Instn., Calcutta,	1022	60	
14	Banerjee Ben,	..Fogose School, Dacca, ..	1021	60	<i>Higher Standard.</i>
15	Evans, H.,	..La Martinière, Lucknow, ..	1008	59	
16	Shepherd, R.,	..La Martinière, Lucknow, ..	985	58	
17	Bell, G.,	..Sergt, G-18, Royal Arty., ..	985	58	

1877.

No.	Name.	Rank and Corps, and where educated.	Marks obtained	Percent	Remarks.
17	Kidari Lal,	.. Bareilly College, ..	968	58	
18	Wood, C F.,	.. Corporal, 83rd Regiment, ..	967	57	
19	Andrews, J.,	.. Bp Cotton School, Sumt., ..	969	55	
21	Williams, J. J.,	.. Lance-Corpl, 10th Hussars, ..	965	56	
22	Calvert, P.,	.. St Peter's College, Agra, ..	990	55	
23	Thornston, E.,	.. Private, 8th Hussars, ..	919	54	
24	Grey, J.,	.. Lance-Corpl, 40th Regt., ..	877	52	
25	Haricharan Mukhopadhyay,	.. High School, Midnapore, ..	880	51	Will be given Certificate as Overseer, if favourably reported on at end of Apprenticeship year.
26	Raz Govind,	.. Government College, Agra, ..	881	49	
LOWER SUBORDINATE CLASS					
(Full Marks, 1800)					
Sub-Overseers, (Military)					
1	Synd Naz Khan,	.. Sowar, 12th B. L.,	810	51	
2	Bam Das,	.. Sowar, 12th B. C.,	814	49	
Sub-Overseers, (Civil)					
1	Datt Singh,	.. Meerut,	1143	78	Higher Standard. Prizes for General Merit and Surveying
2	Panjah Singh,	.. Lahore,	1141	71	Higher Standard. Prizes for Drawing
3	Datt Chand,	.. Jullundur,	1126	70	Higher Standard.
4	Sunder Ram,	.. Roorkhee,	1084	68	
5	Todar Mal,	.. Roorkhee,	1045	65	
6	Ala Baksh,	.. Lahore,	1044	65	
7	Jagpat Ray,	.. Bikanerabad,	1039	64	
8	Radha Kishan,	.. Meerut,	998	62	
9	Jadw Hasan,	.. Meerut,	998	62	Prizes for Civil Engineering.
11	Janki Nath,	.. Meerut,	973	61	
12	Saraj Bhan (1),	.. Testerton,	968	60	
13	Saraj Bhan (2),	.. Deoband,	964	60	
14	Kamaya Lal,	.. Roorkhee,	916	57	
15	Harkish Lal,	.. Saharanpur,	908	57	
16	Fasal Hasan,	.. Bulandshahr,	897	56	
17	Takur Das,	.. Meerut,	883	55	
18	Sham Lal,	.. Sardhana,	859	54	
19	Muraddin,	.. Roorkhee,	848	53	
20	Murari Lal,	.. Roorkhee,	839	53	
21	Nauch Mal,	.. Meerut,	832	51	
22	Devki Nandan,	.. Meerut,	832	51	
23	Fohli Mal,	.. Ludhiana,	820	51	
24	Behari Lal,	.. Bijnor,	804	50	
25	Baldeo Singh (1),	.. Saharanpur,	796	50	
26	Gobind Ray,	.. Roorkhee,	771	48	
27	Dyna Nith,	.. Meerut,	766	48	
28	Sita Ram,	.. Jullundur,	765	48	
29	Baldeo Singh (2),	.. Sardhana,	766	47	
30	Melchad,	.. Bijnor,	760	47	Excluded.

1877.

No.	Names.	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.
22	Harnam Singh,	.. Deoband,	745	47	} Failed.
24	Ananta Prasad,	.. Manglam,	740	46	
25	Mahmud Ali,	.. Rijnor,	739	46	
26	Mohd Bakht,	.. Deoband,	738	46	
27	Kundan Lal,	.. Muzaffarnagar,	700	42	
28	Murshid Hussain,	.. Agra,	680	42	
(Nagri Class)					
10	Lokman Das,	.. Mainpuri,	879	61	Prize for Mathematics and Major Brandreth's Prize for English.
14	Sadri Datta,	.. Srinagar,	847	59	
15	Hardeo Sahay,	.. Bulandshahr,	826	58	
Metric Class.					
(Full Marks, 400)					
1	Lachman Singh,	.. Carpenter,	800	75	
2	Pera Raj,	.. Carpenter,	293	75	
3	Abdullah,	.. Carpenter,	228	57	
4	Hassan Ali,	.. Bricklayer,	133	33	Failed

1878.

ENGINEER CLASS

(Full Marks, 3250)

1	Fahar, C S. R.,	.. La Martinière, Lucknow,	2474	76	Higher Standard Council of India Prize of Rs. 1,000 Cantley Gold Medal for Mathematics. Thomson Gold Medal for best Design. Col. Medley's Prize for Civil Engineering. Qualified in Photography.
2	Oliver, G. T.,	.. St. George's School, Sivala,	2345	72	Higher Standard.
3	Bennett, W. E. T.,	.. Liverpool College, and Munro's School,	2124	66	General Macleagan's Prize for Experimental Science. Qualified in Photography.
4	Cleesey, D. J.,	.. St. George's College, Munro's,	2118	65	} Qualified in Photography.
5	Foy, W. R.,	.. La Martinière, Lucknow,	2004	62	
6	Hartnett, G. M.,	.. La Martinière, Lucknow,	1988	61	Lieutenant Mayoock's Prize for Mechanics
7	Chatter, E.,	.. Munro's School,	1987	60	
8	Rajson Lal,	.. Government College, Agra,	1945	60	Higher Standard Thomson Prize of Rs. 250. Qualified in Photography.

1878.

No.	Name.	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.
9	Hauig, B L,	.. Edinburgh High School and Munro's School, ..	1885	58	Prize for Drawing Prize for Photography, 1877.
10	Copeland, J., <i>Lieut.</i> , <i>T C V R</i> ,	.. Wood's Academy, Munro's,	1886	57	
11	Batta Lal,	.. Muir Central College, Alahabad,	1712	53	Raj Bahadur Kunhya Lal's Gold Medal.
12	Iswar Chander Das,	.. Presidency College, Calcutta,	1622	50	
13	Barrett, J E,	.. Bp Cotton School, Simla,	1606	49	
14	Lawrie, A. E., <i>2nd</i> <i>Lieut., T C V R</i> ,	.. Bp Cotton School, Simla,	1580	48	
15	Gopal Das,	.. Govt College, Lahore,	948	29	Sick.
UPPER SUBORDINATE CLASS					
(Full Marks, 1700)					
1	Bloo, A H,	.. Lee-Corpl., 51st Regiment,	1888	82	<i>Higher Standard</i> Prize for General Merit, Mathematics, Civil Engineering and Photography.
2	Connell, J J,	.. Lee-Corpl., 1-17th Regt., ..	1278	75	<i>Higher Standard</i> Prize for Surveying, and Major Brandreth's Prize for Note-Books, Qualified in Photography.
3	Abbey, W,	.. Lawrence M. A., Sanawar,	1267	75	<i>Higher Standard.</i>
4	Sage, W,	.. Lance-Corpl., 2-80th Rifles,	1212	71	<i>Higher Standard.</i> 'Key Memorial' Prize for Estimating. Qualified in Photography.
5	Gentry, C,	.. Private, 51st Regiment, ..	1200	71	<i>Higher Standard</i>
6	Lee, J,	.. Corporal, 48th Regiment,	1197	70	<i>Higher Standard</i> Qualified in Photography.
7	Malpass, A.,	.. Drummer, 68th Regiment,	1195	70	
8	Kher Singh,	.. Govt. School, Amritsar, ..	1162	68	
9	Pamella, W B,	.. Sergeant, 1-18, Royal Arty.,	1115	65	
10	Maddonald, D K,	.. Lee-Corpl., 48th Regiment,	1108	65	<i>Higher Standard</i>
11	St. Clare, L,	.. Private, 1-35th Regiment,	1105	65	
12	Perry, C,	.. Private, 44th Regiment, ..	1102	65	
13	Sulsen Singh,	.. District School, Lahore, ..	1102	65	
14	Crawford W,	.. La Martinière, Lucknow, ..	1100	65	<i>Higher Standard</i>
15	Whitley, W,	.. Private, 51st Regiment, ..	1087	63	
16	Bryan, J,	.. La Martinière, Lucknow, ..	1066	62	
17	Fitzpatrick, P J,	.. St George's College, Munro's,	1039	61	
18	Rogers, H A,	.. Corporal, Royal Engineers,	944	55	Prize for Drawing.
19	Rund Kumar,	.. High School, Aligarh, ..	946	57	
20	Henderson, T,	.. Lee-Corpl., 51st Regiment,	946	56	
21	Deomath Sahay,	.. Zillah School, Chupra, Sarun,	945	56	
22	Smith, J,	.. Lee-Corpl., 62nd Regt., ..	933	55	
23	Nityam Prashada,	.. High School, Aligarh, ..	926	54	
24	Jogindra Chandra Ganguly,	.. General Assembly's Institution, Calcutta, ..	869	51	
25	Singleton, W.,	.. Lee-Corpl., 40th Regiment,	867	51	
26	Westwood, T,	.. Lee-Corpl., 65th Regt., ..	865	51	

1878

No.	Name.	Rank and Corps, and where educated.	Marks gained. (Percent)	Remarks
27	Ballivan, J.,	.. Sergeant, 1-25th Regiment,	834.49	Will be given Certificates as Overseers if favourably reported on at end of Apprentice year
28	Bach, J. P.,	.. Private, 9th Lancers, ..	828.48	
29	Leslie, A. N. B.,	.. Private, 6th Lancers, ..	774.48	
30	Clifford, W. J.,	.. Private, 1-2nd Regiment, ..	745.44	Failed.
LOWER SUBORDINATE CLASS.				
(Full Marks, 1800).				
Sub-Overseers, (Military).				
1	Jenab Ali,	.. Sowar, 9th B C, ..	752.48	Failed
2	Muhammad Hussain Khan,	.. Sowar, 7th B C, ..	720.48	
3	Sher Bax Khan,	.. Sowar, 5th B C, ..	695.48	
4	Abdul Rahman,	.. Drummer, 11th N I, ..	689.48	
5	Wilayat Hussain,	.. Sowar, 3rd C I H, ..	663.41	
6	Jamal Singh,	.. Sepoy, 26th P N I, ..	568.36	
Sub-Overseers, (Civil)				
(Urdu Class)				
1	Bada Nand,	.. Ludhiana, ..	1235.77	Higher Standard. Prizes for General Merit, Surveying and Drawing.
2	Bakya Ram,	.. Jhelum, ..	1110.09	Higher Standard.
3	Jogai Kishore,	.. Bughra, ..	1074.67	Higher Standard. Prize for Civil Engineering.
4	Muhammad Munir Khan,	.. Farukhabad, ..	1061.66	Higher Standard.
6	Harnam Singh,	.. Saharanpur, ..	1053.66	
7	Nasrat Ali,	.. Farukhabad, ..	1052.66	
8	Soban Lal,	.. Bulandshahr, ..	1027.04	
9	Muhammad Ibrahim,	.. Bijnor, ..	1019.64	
10	Hardwari Lal,	.. Kandi, ..	1018.64	
11	Mirad Ali,	.. Saharanpur, ..	945.59	
12	Sri Ram,	.. Muzaffarnagar, ..	942.59	
13	Muhammad Ahmad,	.. Sikandrabad, ..	937.59	
14	Chait Ram,	.. Jullundur, ..	932.58	
15	Imam-ud-din,	.. Jullundur, ..	926.58	Failed.
16	Nasir Kishore,	.. Bulandshahr, ..	907.57	
17	Hari Ram,	.. Kandi, ..	858.54	
18	Parlap Singh,	.. Patna, ..	858.54	
21	Abdul Rahman,	.. Saharanpur, ..	852.53	
21	Fida Hussain,	.. Muzaffarnagar, ..	852.53	
24	Umar Singh,	.. Deolband, ..	815.51	
24	Ranjit Singh,	.. Muzaffarnagar, ..	784.49	
25	Bard Singh,	.. Patna, ..	777.49	
26	Ghulamali Lal,	.. Meerut, ..	740.46	
27	Malak Singh,	.. Rooskee, ..	732.46	
28	Babal Singh,	.. Muzaffarnagar, ..	718.45	
29	Shams-ud-din,	.. Bijnor, ..	706.45	

1878.

No.	Names.	Rank and Corps, and where educated	Marks gained	Remarks.
<i>(Nagri Class).</i>				
9	Sci Govind,	.. Aligarh,	1131	<i>Higher Standard</i> Prizes for Mathematics and Experimental Science.
19	Bhūti Singh,	.. Manipuri,	887	Major Standreth's Prize for English.
20	Tara Datta,	.. Garhwal,	855	
<i>Metric Class</i>				
<i>(Full Marks, 625).</i>				
1	Gokal Chand,	.. [Carpenter,	948	

1879.

ENGINEER CLASS.				
<i>(Full Marks, 3250).</i>				
1	Willcocks, J,	.. Munsoree School,	2705	<i>Higher Standard.</i> Council of India Prize of Rs 1,000 as the most distinguished Student. Thomason Gold Medal for best Engineering Design. Col Medley's Prize for Civil Engineering. General Macdagan's Prize for Experimental Science. Prize for Drawing. Lieut Maycock's Prize for Surveying.
2	Geumont, C. E V,	.. La Martinière, Lucknow,	2678	<i>Higher Standard.</i> Cantley Gold Medal for Mathematics. Special Prize for Experimental Science.
3	Suryan Das, B A,	.. Lahore College,	2301	<i>Higher Standard.</i> Thomason Prize of Rs 250. Babu Krishna Chandra Banerji's Prize for Mathematics.
4	Furley, F,	.. Bp Cotton School, Sumla,	2274	<i>Higher Standard.</i> Qualified in Photography.
5	Kanhya Lal,	.. Delhi College,	1938	<i>Higher Standard.</i> Rai Babadur Kanhya Lal's Gold Medal.
6	Davis, J G,	.. Bp Cotton School, Sumla,	1938	Qualified in Photography.
7	Gopal Chandra Chattopadhyay, B A,	.. Pres College, Calcutta,	1811	
8	Ives, J E,	.. Munsoree School,	1723	Prize for Photography, 1878.
9	Floyd, C J,	.. Munsoree School,	1671	Qualified in Photography.
10	Fitzmmons, A G,	.. La Martinière, Lucknow,	1560	
11	Bell, E W,	.. La Martinière, Lucknow,	1556	Failed.

1970.

No.	Name.	Rank and Corps, and where educated.	Mark obtained	Prize	Remarks.
UPPER SUBORDINATE CLASS					
(Full Marks, 1700).					
1	Flake, A J,	.. Lawrence M. A., Sanawar,	1478	67	<i>Higher Standard</i> Prizes for General Merit, Mathematics, Civil Engineering, and Drawing Qualified in Photography
2	Adams, G.,	.. Private, 1-6th Regiment, ..	1277	75	<i>Higher Standard</i> Qualified in Photography.
2	Misner, E,	.. St. Peter's College, Agra, ..	1259	74	
4	Amar Nath,	.. Govt. College, Lahore, ..	1228	71	
5	Hari Krishan Pant,	.. Mission School, Almorah, ..	1200	71	
6	Nichol, H.,	.. Private, 68th Regiment, ..	1188	70	<i>Higher Standard</i> , Prizes for Surveying and Photography, 'Key Memorial' Prize for Estimating and Major Brandreth's Prize for Note Books
7	Gokal Chand,	.. Govt. College, Lahore, ..	1096	65	<i>Higher Standard</i> Qualified in Photography
8	Perfect, A.,	.. Lance-Corpl, 1-6th Regt, ..	1078	63	<i>Higher Standard</i> .
9	Jhanda Lal,	.. High School, Aligarh, ..	1063	63	
10	McDermott, P,	.. St. Peter's College Agra, ..	1021	60	
11	Ram Lal,	.. High School, Aligarh, ..	1005	59	
12	Charanj Lal,	.. Forest Apprentice, ..	1001	59	
13	Bellani, B.,	.. Private, 18th Hussars, ..	970	67	
14	Morol, A.,	.. Lance-Serjt, 2-17th Regt, ..	942	55	
15	Narsingh Das,	.. Govt. School, Gujrat, ..	858	51	
16	Jogal Kishore,	.. Patiala College, ..	831	49	Failed
LOWER SUBORDINATE CLASS					
(Full Marks, 1600)					
1	Mohammad Imdad Hussain,	.. Bulandshahr, ..	1202	75	<i>Higher Standard</i> Prizes for General Merit, Civil Engineering, and Drawing
2	Uttam Singh,	.. Hoshiarpur, ..	1126	75	<i>Higher Standard</i> Prize for Surveying
3	Baldeo Sahty,	.. Meerut, ..	1190	74	<i>Higher Standard</i>
4	Narayan Das,	.. Saharanpur, ..	1119	70	
5	Rashu Ram,	.. Hoshiarpur, ..	1057	66	<i>Higher Standard</i> Major Brandreth's Prizes for English and Housmead Urdu.
6	Toti Ram,	.. Aligarh, ..	1053	66	<i>Higher Standard</i> Prize for Mathematics.
7	Harkishan Das,	.. Bulandshahr, ..	1017	64	<i>Higher Standard</i> .
8	Hardevi Lal,	.. Saharanpur, ..	1007	63	
9	Mahadeo Lal,	.. Meerut, ..	977	61	
10	Kalla Singh,	.. Meerut, ..	950	58	
11	Ram Sarna Das,	.. Meerut, ..	912	57	
12	Ahmed Hassan,	.. Meerut, ..	891	55	
13	Babari Lal,	.. Sikandarpur, ..	889	55	
14	Indra Ram,	.. Diba, ..	884	55	

1879.

No.	Names.	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.
15	Kaala Singh,	.. Ludhiana,	.. 870	54	} Failed.
16	Jagannath,	.. Meerut,	.. 858	54	
17	Falyas Hansa,	.. Delhi,	.. 828	52	
18	Dasdeo,	.. Patiala,	.. 716	45	
19	Fakir,	.. Patiala,	.. 598	35	

1880

LOWER SUBORDINATE CLASS

(Full Marks, 1600).

(Class A or B)

1	*Bhagat Ram,	A .. Hoshiarpur,	.. 1138	71	Prize for General Mark.
2	*Ramji Lal,	A .. Roorkee,	.. 1123	70	Prize for Civil Engineering.
3	*Abdulah,	A .. Umballa,	.. 1118	70	Prize for Romanised Urdu.
4	*Barkat Ray,	A .. Gaya,	.. 1101	69	Prize for English
5	*Jugal Kishor,	A .. Roorkee,	.. 1095	68	} Prize for Surveying
6	*Kishan Lal,	A .. Balasahahr,	.. 1094	68	
7	Parmanand,	A .. Moradabad,	.. 1079	67	} Prize for Mathematics.
8	Ganpat Singh,	A .. Balasahahr,	.. 1070	67	
9	Mohan Singh,	A .. Patiala,	.. 1063	66	} Failed
10	Himmat Singh,	A .. Meerut,	.. 1041	65	
11	Gham Ahmad,	A .. Ludhiana,	.. 1034	65	
12	Hartalee,	A .. Roorkee,	.. 1024	64	
13	Mutsadi Lal,	A .. Meerut,	.. 996	62	
14	Nazir Ali,	A .. Faridkot,	.. 978	61	Prize for Drawing.
15	Balmukund,	A .. Muzaffarnagar,	.. 938	59	} Failed
16	Kanhaya Singh,	A .. Patiala,	.. 911	57	
17	Fauz Muhammad,	A .. Saharanpur,	.. 901	56	
18	Kishan Chand,	A .. Gurdaspur,	.. 887	55	
19	Narayan Prasad,	A .. Roorkee,	.. 838	53	
20	Kundan Lal,	A .. Muzaffarnagar,	.. 821	51	} Failed
21	Ram Prasad,	A .. Muzaffarnagar,	.. 759	47	
22	Ahmad Naqi,	A .. Roorkee,	.. 754	47	
23	Janki Prasad,	A .. Roorkee,	.. 717	45	
24	Munshi Lal,	A .. Roorkee,	.. 698	44	
25	Nur Muhammad,	A .. Patiala,	.. 696	43	} Failed
26	Chandr Shikhar,	A .. Ferozepore,	.. 679	42	
27	Chamman Lal,	B .. Saharanpur,	.. 666	42	
28	Shambhi Das,	A .. Muzaffarnagar,	.. 636	40	
29	Amir Hussain,	B .. Mangalaur,	.. 636	39	
30	Sudhan Lal,	A .. Farukhabad,	.. 634	39	} Failed
31	Jivan Lal,	A .. Roorkee,	.. 620	39	
32	Gopal Singh,	A .. Puri,	.. 617	39	
33	Satkar Baksh,	A .. Ajmere,	.. 605	38	
34	Anant Ram,	A .. Patiala,	.. 597	37	
35	Birdev,	A .. Puri,	.. 441	28	

* Selected for a second year's instruction

1880.

No.	Name.	Rank and Corps, and where educated.	Marks gained.	Remarks.
36	Muhammad Zafar, B..	Mumtaznagar,	419 28	Failed
37	Mahbub Ali, B..	Ramkhet,	398 25	

1881.

ENGINEERS CLASS.
(Full Marks, 3500).

1	Housden, W P.,	Mussoorie School,	2676 76	Higher Standard Council of India Prize of Rs. 1,000 as the most distinguished Student. Col Medley's Prize for Civil Engineering General MacLagan's Prize for Experimental Science. Prize for Drawing. Qualified in Photography.
2	Toose, J.,	La Martinière, Lucknow,	3508 72	Higher Standard Cantley Gold Medal for Mathematics. Qualified in Photography.
3	Gwyther, F E.,	Mussoorie School,	2443 70	Prize for Photography.
4	Parva, R E.,	La Martinière, Lucknow,	3439 70	Higher Standard
5	Billings, H G.,	Mussoorie School,	2278 65	Qualified in Photography
6	James, H. W.,	Mussoorie School,	2228 64	Thomson Gold Medal for best Engineering Design. Lieut Maycock's Prize for Surveying
7	Kah Krishna Mukhopadhyay,	Lahore College,	2182 68	Bau Shahdun Kunhya Lal's Gold Medal
8	Bryj Mohan Lal,	Canning College, Lucknow,	2128 61	Higher Standard. Thomson Prize of Rs. 250.
9	Ram Lal,	Agia College,	2067 59	
10	Henderson, J.,	Wood's Academy, Mussoorie,	2045 58	
11	Parsons, H. J.,	St. George's College, Mussoorie,	2011 57	
12	Mee, G.,	La Martinière, Lucknow,	1898 54	
13	Holmes, P.,	La Martinière, Lucknow,	1758 50	

UPPER SUBORDINATE CLASS

(Full Marks, 1250).

1	Johnston, H. H. D.,	Bawal Pindi,	1423 77	Higher Standard. Prizes for General Merit, Drawing and Surveying. Qualified in Photography.
2	Vivian, S. C.,	Lawrence Asylum, Sanawar,	1408 76	Higher Standard. Prize for Mathematics
3	Hourka, J.,	St. George's College, Mussoorie,	1385 75	Qualified in Photography. Higher Standard.
4	Amadapristed Ray,	Haji College,	1275 69	
5	Maya, J. C.,	La Martinière, Lucknow,	1263 68	

1891.

No.	Names.	Rank and Corps, and where educated.	Matric.	Final.	Remarks.
6	Bakhshi Gulab Singh,	Govt. School, Balkanpur, ..	1229/60		
7	Goodwin, H.,	.. Lance-Corpl, 1-12th Regt.	1325/66		Prize for Civil Engineering and 'Key Memorial' Prize for Estimating. Qualified in Photography.
8	Willford, C.,	.. St. George's College, Mussoorie, ..	1218/66		Higher Standard. Prize for Photography.
9	Ralph, J.,	.. Lee-Corpl, 29th Regiment,	1196/65		Higher Standard.
10	Syme, C. M.,	.. Gunner, O-S, Royal Artillery,	1177/64		Major Brandreth's Prize for Note Books.
11	Khanbal Chand,	.. Govt. College, Lahore, ..	1162/68		
12	Ali Mohammad,	.. Oriental College, Lahore, ..	1068/69		
13	Kelly, F.,	.. Private, 3-6th Regiment, ..	1082/67		
14	Wiseman, F.,	.. Lee-Corpl, 29th Regiment,	1007/64		
15	Sham Lal,	.. Zilla School, Abganah, ..	977/58		
16	Rameshar,	.. Patiala College,	920/50		Will be given Certificates as Overseers if favourably reported on at end of Apprentices year
17	Chandra Kanto Banerjee,	.. Kishanagar College,	911/49		
LOWER SUBORDINATE CLASS					
(Full Marks, 1700).					
Sub-Overseers, (Military)					
1	Ajādha Tiwari,	.. Sepoy, 13th B N I, ..	894/69		
2	Rakot Singh,	.. Sepoy, 8th B I, ..	828/49		
3	Shahsidā Khān,	.. Sowar, 12th B. C., ..	750/44		
Sub-Overseers, (Civil).					
(Class A or B)					
(Second Year)					
1	Bhāgat Rām,	A .. Hoshiarpur, ..	..	..	Appointed to the P W Department
2	Rām Lal,	A .. Roorkhee, ..	..	..
3	Abdullah,	A .. Umballa, ..	..	..
4	Barkat Rai,	A .. Gujrat, ..	..	..
5	Jugal Kishor,	A .. Roorkhee, ..	..	..
6	Kamhan Lal,	A .. Balasahar, ..	..	..
(First Year)					
1	*Shahsidā Ali,	B .. Lucknow, ..	1338/73		Prizes for General Merit, Surveying and English.
2	*Bāh Rām,	A .. Faori, ..	1179/69		
3	*Mirza Baksh,	A .. Lahore, ..	1135/67		Prize for Mathematics.
4	*Mostaqim,	B .. Dabhoi, ..	1116/66		Prize for Civil Engineering
5	*Astar Singh,	B .. Jhelum, ..	1075/63		Prize for Drawing.
6	*Bijaj Lal,	A .. Meerut, ..	1059/62		
7	Khat Chaud,	A .. Roorkhee, ..	1049/63		
8	Bamal Dhar,	B .. Jaunpur, ..	1015/60		
9	Gyan Chaud,	A .. Baraut, ..	995/59		Prize for Romanised Urdu.

* Selected for a second year's instruction

1881.

No.	Names.	Rank and Corps, and where obtained.	Mark obtained	Remarks.
10	Amrit Lal,	A.. Saharanpur,	891 58	
11	Lahfullah Khan,	B.. Delhi,	977 58	
12	Raja Ram,	A.. Roorkhee,	949 58	
13	Ganga Ram,	A.. Delhi,	891 52	
14	Karim Bakhsh,	A.. Ludhiana,	880 58	
15	Bahal Singh,	A.. Deoband,	864 51	
16	Gopal Singh,	B.. Patiala,	859 51	
17	Nikka Singh,	A.. Patiala,	850 50	
18	Sita Ram,	A.. Roorkhee,	841 50	
19	Ram Chander,	A.. Roorkhee,	837 49	
20	Amir Singh,	A.. Roorkhee,	844 49	
21	Gobind Prasad,	A.. Moradabad,	852 49	
22	Abdul Haq,	A.. Roorkhee,	827 49	Failed
23	Amanat Khan,	A.. Saharanpur,	819 48	
24	Mathra Das,	A.. Meerut,	813 48	
25	Mahbub Lal,	A.. Benares,	800 47	
26	Munad Khan,	A.. Saharanpur,	793 47	
27	Azamuddin,	B.. Jandiala,	784 46	
28	Kandan Lal,	B.. Karnal,	765 45	
29	Abdur Rasool,	A.. Saharanpur,	759 45	Failed
30	Munshi Lal,	A.. Muzaffarnagar,	711 43	
31	Asghar Hussain,	B.. Muzaffar,	690 41	
32	Hussain Bakhsh,	B.. Saharanpur,	637 36	
33	Muhammad Ismail,	B.. Saharanpur,	601 35	

1882.

ENGINEER CLASS.

(Full Marks, 3500).

1	Vyas, F W,	La Martinière, Lucknow, ..	2290 68	Higher Standard Council of India Prize of Rs. 1,000 as the most distinguished Student. Cantley Gold Medal for Mathematics. Prize for Photography.
2	Lotter, D M.,	.. Bishop Cotton School, Simla,	2270 65	Thomson Gold Medal for best Engineering Design. Col Medley's Prize for Civil Engineering. Lieut. Harrison's Prize for Surveying.
3	Taylor, J M,	.. Bishop Cotton School, Simla,	2240 64	Higher Standard Extra Prize for Surveying. Qualified in Photography.
4	Athum, B.,	.. St. George's College, Mussoorie,	2237 64	Qualified in Photography.
5	Anthony, O T,	.. Mussoorie School,	2136 61	General Madagan's Prize for Experimental Science.
6	Hibet, G. F.,	.. Mussoorie School,	1900 54	
7	Leonard, J.,	.. Wood's Academy, Mussoorie,	1881 54	Qualified in Photography.
8	McLeod, O F,	.. St. George's College, Mussoorie,	1795 51	Prize for Drawing

1882

No.	Names	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.	
UPPER SUBORDINATE CLASS.						
(Full Marks, 1880)						
1	O'Reilly, J J,	.. Lawrence Asylum, Banawar,	1610	87	Higher Standard Prizes for General Merit, Mathematics, Civil Engineering, Drawing, and 'Key Memorial' Prize for Estimating. Qualified in Photography	
2	Wilkinson, F W,	.. La Martiniers, Lucknow,	1538	83	Higher Standard Prizes for Surveying and Photography.	
3	Edwards, C,	.. Pte, 2nd Bn Royal War- wickshire Regiment, ..	1431	71	Higher Standard. Qualified in Photography	
4	Chaloner, W,	.. Lee-Serjt, 2nd Bn Royal Warwickshire Regiment,	1254	68	Higher Standard Major Bismar- ck's Prize for Note Books.	
5	Haran Chandra Ban- dyopadhyay,	.. Metropoli Instn., Calcutta,	1187	64	Higher Standard Qualified in Photography	
6	Clarke, P J,	.. Lawrence Asylum, Banawar,	1165	63	Higher Standard.	
7	Bansl Dhar,	.. Bareilly College,	..	1113	60	
8	Bani Madhav Mallik,	.. Hugi College,	..	1110	60	
9	Lynch, A,	.. Pte, 2nd Bn Cheshire Regt,	1087	59		
10	Hogers, C F,	.. St. Fidelis' Schl, Mussorie,	1080	58		
11	Striman Naram,	.. High School, Farakhabad,	1059	57		
12	Waters, T,	.. Lee-Corpl, 1st Bn South Lancashire Regiment, ..	1016	55		
13	Harkiss Bhaduri,	.. Howrah Govt School, ..	988	53		
14	Lehna Singh,	.. Upper School, Gyrat, ..	984	53		
15	Badha Kishan,	.. Govt College, Lahore, ..	981	55		
16	Kapurya Ram,	.. Patiala College,	..	982	50	
LOWER SUBORDINATE CLASS.						
(Full Marks, 1700)						
Sub-Overseers, (Military).						
1	Ahmed Ali,	.. Sepoy, Sappers and Miners,	908	53		
2	Fauji Shah,	.. Sowar, 9th B C,	..	702	41	
Sub-Overseers, (Civil)						
(Class A or B)						
(Second Year).						
1	Shahstade Ali,	B.. Lucknow,	..	..	} Appointed to the F. W De- partment.
2	Bali Ram,	A .. Paoi,	..	..
3	Miran Bakshah,	A .. Lahore,	..	..
4	Musatqum,	B .. Dalhousie,	..	..
5	Attar Singh,	B .. Jhelum,	..	..
6	Sirajul Haq,	A.. Meerut,	..	..
(First Year)						
1	*Girdhari Lal,	A.. Annapahar,	..	1236	73	Prizes for General Merit, Mathe- matics and Civil Engineering.
2	*Manak Chand,	A .. Wazirah-nagar,	..	1152	68	Prize for Surveying
3	*Kulthi Mal,	A.. Bahadurgarh,	..	1100	63	

* Selected for a second year's instruction

1882.

No.	Name.	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.
4	*Pran Narayan, A	Anupshahr,	1144	67	
5	*Zahurul Haq, A	Muzaffarnagar,	1087	64	
6	*Janna Dās, A	Debal,	1082	64	
7	Gokal Chand, A	Sahāranpur,	1080	64	
8	Rām Swarup, A	Bikānārabād,	1058	62	
9	Kadir Baksh, B	Hardoi,	1051	62	Prize for Drawing
10	Kapūr Singh, B	Lahore,	1048	62	Prizes for English and Roman-
11	Husam-ud-din, B	Rampur,	1041	61	ised Urdu.
12	Anup Singh, A	Meerut,	1034	61	
13	Har Gobind, A	Seerāh,	1009	59	
14	Buland Ray, A	Muzaffarnagar,	991	58	
15	Daulat Rām, B	Delhi,	989	58	
16	Janki Dās, A	Muzaffarnagar,	968	58	
17	Baru Lal, A	Deoband,	952	56	
18	Daulat Rām, A	Indora,	934	56	
19	Ajodhya Prasad, A	Muzaffarnagar,	909	54	
20	Chajja Rām, A	Roohiarpur,	900	53	
21	Muhammad Raza, A	Fatāla,	889	53	
22	Kanhaya Lal, A	Fatāla,	889	53	
23	Shah Ahmad, B	Kohat,	885	52	
24	Indar Bhan, A	Agra,	877	52	
25	Nur Ahmad, A	Roorkhee,	878	51	
26	Havaran Dās, A	Sahāranpur,	867	51	
27	Anand Rāp, B	Bareilly,	865	51	
28	Kalyan Singh, A	Roorkhee,	842	50	Failed
29	Wahaj-ud-din, B	Dalhouse,	838	49	
30	Dewan Singh, A	Meerut,	828	49	Failed.
31	Rahmāllah, B	Delhi,	823	48	
32	Asis Ahmad, B	Agra,	823	48	
33	Imam Khan, A	Roorkhee,	778	46	} Failed.
34	Bardhyan Singh, A	Roorkhee,	746	44	
35	Zegham Husein, B	Bahadurshahr,	719	43	

1883.

ENGINEERS CLASS.
(Full Marks, 3450).

1	Curtis, O,	Bp Cotton School, Samla,	2718	78	Higher Standard Council of India Prize of Rs 1,000 as the most distinguished Student Cantley Gold Medal for Mathematics. Thomson Gold Medal for best Engineering Design. General Macdonald's Prize for Experimental Science. Col Medley's Prize for Civil Engineering. Lieut. Harrison's Prize for Surveying. Prizes for Drawing and Photography. Lieut. Colonel Brandreth's Prize for Miscellaneous Problems.
---	------------	--------------------------	------	----	--

* Selected for a second year's instruction.

1893

No	Name.	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.
2	Ashton, A. H.,	.. Bp. Cotton School, Banla,	2374	63	<i>Higher Standard.</i>
3	Chew, A. J.,	.. Bp. Cotton School, Bangalore,	2237	65	Qualified in Photography.
4	Rajeswar Mitter,	.. Patna College,	2117	61	<i>Higher Standard.</i> The Thomson Prize of Rs. 250. Qualified in Photography.
5	Wadley, H. J.,	.. La Martinière, Lucknow,	2110	61	Qualified in Photography.
6	Nihal Chand,	.. Govt. College, Lahore,	2062	60	Rai Bahadur Kanhya Lal's Gold Medal.
7	Fraitt, C.,	.. Mission School,	2052	59	
8	Mitchell, K. J.,	.. La Martinière, Lucknow,	2028	58	
9	Wilkinson, H.,	.. La Martinière, Lucknow,	1902	55	
UPPER SUBORDINATE CLASS.					
(Full Marks, 1850).					
1	Harford, J.,	.. La Martinière, Lucknow,	1600	36	<i>Higher Standard.</i> Prizes for General Merit, Civil Engineering and Photography.
2	Hari Chand,	.. Government School, Gajrat,	1508	31	<i>Higher Standard.</i> Prize for Drawing. Qualified in Photography.
3	Stewart, T.,	.. Rawal Pindi,	1458	79	<i>Higher Standard.</i> Prizes for Mathematics and 'Keay Memorial' Prize for Estimating. Qualified in Photography.
4	Lane, G.,	.. Pte., 1st Bn Border Regt.,	1415	76	<i>Higher Standard.</i>
5	Allen, C.,	Pte., 2nd Bn Royal West Surrey Regiment,	1363	74	<i>Higher Standard.</i> Prize for Surveying.
6	Murphy, W.,	.. Private, 1st Bn Connaught Rangers,	1325	72	<i>Higher Standard.</i> Qualified in Photography.
7	Amar Chand,	.. High School, Hoshernagar,	1318	71	<i>Higher Standard.</i>
8	Beaufort, F.,	.. Sergt., 1st Bn East Lancashire Regiment,	1310	71	<i>Higher Standard.</i> Lieut.-Col Brandreth's Prize for Note Books. Qualified in Photography.
9	Jogendra Nath Roy,	.. Cathedral Mission College, Calcutta,	1294	70	
10	Pemberton, W.,	.. Sergt., 1st Bn East Lancashire Regiment,	1179	64	<i>Higher Standard.</i>
11	Bai Gobind,	.. Govt. College, Ajmere,	1164	63	
12	Hayden, E.,	.. Pte., 4th Bn King's Royal Rifle Corps,	1161	63	
13	Harcharn Das,	.. Mission School, Lahore,	1010	35	
14	Moore, C. W. B.,	.. Rooster,	1005	54	
15	Bean, G.,	.. Driver, B-C, R. H. A.,	969	53	
16	Bolton, H.,	.. Lieut.-Col., 1st Bn Durham Light Infantry,	932	50	
17	Jenardhan,	.. Patna College,	925	50	
18	Ricketts, G.,	.. Asst Bomb, H-8, R. A.,	923	50	
19	Brij Raj,	.. District School, Delhi,	888	48	Recommended, provided he obtains very good report in Appearance year.

1883.

No.	Name.	Rank and Corps, and where assigned.	Mark obtained.	Remarks.
LOWER SUBORDINATE CLASS.				
<i>(Full Marks, 1700).</i>				
<i>Sub-Overseers, (Military).</i>				
1	Kesar Singh,	.. Sowar, 9th B. C.,	.. 838/49	} Failed
2	Kohar Singh,	.. " 9th B. C.,	.. 866/39	
3	Hakim Khan,	.. Duffadar, 12th B. C.,	.. 818/86	
4	Sher Khan,	.. Sowar, 12th B. C.,	.. 457/27	
5	Muhammad Khan,	.. " 12th B. C.,	.. 489/28	
<i>Sub-Overseers, (Civil).</i>				
<i>(Class A or B).</i>				
<i>(Second Year).</i>				
1	Girdhari Lal,	A.. Anupabahr,	.. ..	} Appointed to the P W Department.
2	Mamuk Chand,	A.. Muzaffarnagar,	.. ..
3	Kalin Lal,	A.. Bahadurgarh,	.. ..
4	Pran, Kanyan,	A.. Anupabahr,	.. ..
5	Zakari Lal,	A.. Muzaffarnagar,	.. ..
6	Jamun Das,	A.. Delhi,	.. ..
<i>(First Year).</i>				
1	*Chand Prasad,	A.. Saharanpur,	.. 1838/79	Prize for General Merit.
2	*Munshi Lal,	A.. Rohat,	.. 1838/76	Prizes for Surveying and Drawing
3	*Shur Deyal Singh,	B.. Dehra,	.. 1810/77	Prizes for Romanised Urdu and English
4	*Nahar Singh,	B.. Bahawalpur,	.. 1265/74	Prizes for Mathematics and Civil Engineering.
5	*Jhanda Mal,	A.. Rawal Pindi,	.. 1226/73	
6	*Kundan Lal,	A.. Roorkhee,	.. 1284/73	
7	*Swarn Lal,	A.. Muzaffarnagar,	.. 1192/70	
8	Ram Das,	A.. Delhi,	.. 1185/69	
9	*Kishan Lal,	A.. Delhi,	.. 1189/67	
10	*Omara Shahr,	A.. Umballa,	.. 1112/66	
11	*Hikab Lal,	A.. Roorkhee,	.. 1102/65	
12	*Har Narayan,	A.. Gurgaonwall,	.. 1094/64	
13	*Munshi Lal,	A.. Roorkhee,	.. 1049/62	
14	*Gul Muhammad,	A.. Bulandshahr,	.. 1044/61	
15	*Bhagwan Singh,	B.. Amritsar,	.. 1028/60	
16	*Ran Kishan Lal,	B.. Lahore,	.. 1008/59	
17	*Hoshiyar Singh,	A.. Saharanpur,	.. 988/58	
18	*Ran Chander,	A.. Delhi,	.. 980/58	
19	*Balla Ram,	A.. Ludhiana,	.. 949/56	
20	*Hamir Singh,	B.. Roper,	.. 948/56	
21	*Lakhpat Ray,	A.. Shahjahanpur,	.. 944/56	
22	*Shah Saran Das,	A.. Jullundar,	.. 940/55	
23	*Bhagwan Das,	B.. Amritsar,	.. 939/55	
24	*Munshi Kashi,	A.. Roorkhee,	.. 888/53	

* Selected for a second year's instruction.

1883.

No	Name.	Rank and Corps, and where educated.	Marks obtained.	Percent.	Remarks.
25	Dharni Dhar,	A., Syanah,	872	61	} Failed.
26	Abdul Hasan,	B., Lucknow,	817	49	
27	Jivan Lal,	A., Roostee,	812	48	
28	Gopal Das,	A., Jallundar,	809	47	
29	Him Saran,	A., Gujrat,	791	47	
30	Kalyan Singh,	A., Dabul,	727	43	
31	Ahmad Hamid,	B., Cawnpore,	631	37	} Failed.
32	Chheda Lal,	B., Sahasganj,	561	33	

1884.

ENGINEER CLASS
(Full Marks, 2450).

1	Fakir Chand,	Mair Central College, Al- lahabad,	2450	71	Higher Standard. Council of India Prize of Rs. 1,000 as the most distinguished Student. The Thomson Prize of Rs. 250 Cavley Gold Medal for Mathematics. General Mac- lagan's Prize for Experimental Science. Qualified in Photography.
2	Ollendach, O. C.,	Mussoorie School,	2318	67	Prizes for Civil Engineering and Photography.
3	Rahamdar Nath,	Govt. College, Lahore,	2186	63	Rai Bahadar Kunhya Lal's Gold Medal. Prize for Drawing.
4	Moran, W. A.,	La Martinière, Lucknow,	2111	61	Thomson Gold Medal for best Engineering Design. Prizes for Civil Engineering and Surveying. Qualified in Pho- tography.
5	Fowell, R. J.,	Mussoorie School,	2091	61	
6	Roberts, F. W.,	Mussoorie School,	2076	60	Panned out as Apprentices on 15th September, 1883. Qua- lified in Photography. Prize for Photography.
7	Slant, W.,	La Martinière, Lucknow,	1964	57	
8	Hamfrass, H.,	St. Cotton School, Sumla,	1876	54	
9	Horst, C.,	Mussoorie School,	1704	49	

UPPER SUBORDINATE CLASS

(Full Marks, 1850).

Special Class.

1	Bennett, A.,	Sergt., 1st Bn. East Lanca- shire Regt.,	1688	69	} Panned out as Apprentices on 15th September, 1883. Qua- lified in Photography. Prize for Photography.
2	Corryingham, G. H.,	Acy Bomb, G-A, R.H.A.,	1584	66	
3	Hunter, J.,	Sergt., 2nd Bn. Northumber- land Footbns,	1582	66	
4	Clayton, H.,	Sergt., 6th Hussars,	1408	76	

1884.

No.	Name.	Rank and Corps, and where educated	Age	Remarks.
<i>Second Year.</i>				
1	Gujar Mall,	.. Dist. School, Hoshiarpur,	1435 78	<i>Higher Standard.</i> Prizes for General Merit and Mathematics.
2	Johnston, A.,	.. Bp. Cotton School, Simla,	1312 71	<i>Higher Standard.</i> 'Key Memorial' Prizes for Bookkeeping, Prizes for Civil Engineering, Drawing.
3	Lynch, M.,	.. Aag Bombr., R-S, R. A.,	1266 68	<i>Higher Standard.</i> Prizes for Surveying.
4	Debi Sahai,	.. High School, Bareilly,	1226 67	<i>Higher Standard.</i> Prizes for Surveying.
5	Dwarika Prasad,	.. High School, Farukhabad,	1193 64	<i>Higher Standard.</i>
6	Boyd, H. A.,	.. Sergt., 1st Bn East Lancashire Regiment,	1183 64	Leut.-Col. Broadbent's Prize for Note Books.
7	Ganesh Rai,	.. Bareilly College,	1180 64	
8	Radhay Lal,	.. Government College, Agra,	1161 63	
9	Chironji Lal,	.. Bareilly College,	1141 62	<i>Higher Standard.</i>
10	Charan Singh,	.. District School, Amritsar,	1078 68	
11	Mahendra Nath Ghosh,	.. Benares College,	1060 67	
12	Sauak Ram,	.. District School, Amritsar,	1026 65	
13	Howard, G. B.,	.. Lawrence Asylum, Banawar,	1024 65	
14	Anantasha Banerji,	.. London Mission High School, Benares,	1023 65	
15	Chitra Sahai,	.. High School, Bareilly,	1020 65	
16	Mahar, R.,	.. St. Fidelis' Schl., Munrooria,	998 64	
17	Lamb, A. J.,	.. Bp. Cotton School, Simla,	974 63	
18	Lynch, J.,	.. Aag Bombr., A-2, R. A.,	948 61	Failed.
19	Ram, A.,	.. St. Fidelis' Schl., Munrooria,	932 60	
20	Hoyle, H. J.,	.. Fte., 4th Bn. King's Royal Rifle Corps,	906 49	
21	Surveshwar Das,	.. Hughly College,	904 49	
22	Durrant, E.,	.. St. George's College, Munrooria,	881 48	
23	Beck, T.,	.. Sergt., 1st Bn Border Regt., Presidency College, Calcutta,	867 47	Failed
24	Kandakya Nath Bajara,	.. London Mission High School, Benares,	859 46	
25	Sarash Chanyal,	.. London Mission High School, Benares,	819 44	
<i>First Year (Special Class).</i>				
1	Lee, L.,	.. 2nd Corp., Royal Engrs.,	1235 58	<i>Higher Standard.</i>
2	Rogers, J.,	.. Private, 9th Lancers,	1246 57	
3	Salvator, G.,	.. Corp., 1st Leinster Regt.,	1201 60	
4	Playar, J.,	.. Driver, G-4, R. A.,	1012 65	
5	Peterson, R. T.,	.. Driver, K-B, R. H. A.,	916 60	Failed.
LOWER SUBORDINATE CLASS				
<i>(Full Marks, 1700).</i>				
<i>Sub-Overseers, (Military).</i>				
1	Ain Muhammad,	.. Sewak, 9th B. C.,	864 51	
2	Muhammad Ali,	.. " 12th B. C.,	837 40	
3	Nikhan Singh,	.. " 12th B. C.,	649 38	

1884.

No.	Names.	Rank and Corps, and where educated.	First Prize	Second	Remarks.
Sub-Officers, (Civilians).					
(Class A or B).					
1	Mitr Sen,	A .. Ballabgarh,	1220	78	Prizes for General Merit, Civil Engineering, Surveying, and Estimating.
2	Sir Singh,	B .. W. J. Canal, Delhi,	1274	75	
3	Gopal Das,	A .. Shalkot,	1238	73	
4	Gopi Nath,	A .. Umballa,	1149	68	Prize for Mathematics.
5	Kachhu Singh,	A .. Bulandshahr,	1183	67	
6	Harbans Lal,	A .. Sahasrampur,	1117	66	
7	Nand Lal,	A .. Kapurthala,	1115	66	
8	Ghulam Haider,	B .. Delhi Provincial Division,	1111	65	Prize for Drawing
9	Achpal Singh,	A .. Roorky,	1101	65	
10	Abdul Ghafor,	B .. B S Railway, Hoshangabad	1076	63	
11	Lakh Raj,	A .. Meerut,	1075	63	
12	Harlal Singh,	B .. Lahore Provincial Division,	1065	63	
13	Ahmad Hussain,	A .. Bijnor,	1064	63	
14	Chanda Lal,	A .. Ludhiana,	1056	62	
15	Lalta Prasad,	A .. Bulandshahr,	1037	61	
16	Tara Chand,	A .. Umballa,	1027	60	
17	Sri Ram (1),	A .. Badaon,	1019	60	
18	Dulbagh Rai,	A .. Amritsar,	1017	60	
19	Udho Prasad,	A .. Kasauli,	1014	60	
19	Kaushya Lal,	B .. W J Canal, Hissar,	1014	60	
21	Abdullah Khan,	B .. Cawnpore Local Works,	964	57	
22	Kasim Ali,	A .. Kasauli,	950	56	
23	Datt Ram,	A .. Patiala,	939	55	
24	Gulab Rai,	A .. Delhi,	938	55	
25	Mudho Ram,	A .. Patiala,	929	54	
26	Faldeo Bahal,	B .. Ganges Canal, Meerut,	911	54	
27	Abdul Samad,	A .. Mian Mir,	884	52	
28	Aakuran Das,	B .. Dera Ghazi Khan P. W.,	881	52	
29	Kashl Ram,	A .. Patiala,	863	51	
30	Bri Ram (2),	A .. Bijnor,	855	50	
31	Jang Bahadur,	A .. Meerut,	838	49	
32	Rita Ram,	A .. Bijnor,	834	49	
33	Purna Das,	A .. Delhi,	803	47	Failed
34	Muhammad Ismail (1),	B .. Simla Imperial Works,	767	45	
35	Muhammad Ismail (2),	B .. Cawnpore Local Works,	747	44	
36	Chajja Singh,	A .. Roorky,	718	42	Failed

1885.

ENGINEER CLASS
(Full Marks, 3450).

1	Phillips, E. A. W.,	Missouri School,	3450	71	Thomson Gold Medal for best Engineering Design. Lieut.-Col. Broadbent's Prize for Civil Engineering. Prizes for Drawing and Surveying. Qualified in Photography.
---	---------------------	------------------	------	----	--

1885.

No.	Name.	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.
3	Wadley, A. J.	La Martinière, Lucknow.	1859	57	Prize for Photography.
3	Inkwan Prasad,	M. A. O. College, Aligarh	1930	55	Raj Bahadur Kunhya Lal's Gold Medal. Qualified in Photography.
4	Beachey, W.,	St George's College, Massachusetts,	1774	51	
5	Boatman, A. M.,	St. Xavier's College, Calcutta,	1786	51	Failed General Macdonald's Prize for Experimental Science.
6	Schleserman, A. W.,	St. George's College, Massachusetts,	1628	47	
7	McLeod, N. C.,	La Martinière, Lucknow,	1573	46	Failed.
8	Harris, J. D.,	England,	406	13	
UPPER SUBORDINATE CLASS.					
(Full Marks, 1850)					
1	Prayag Das,	Mur College, Allahabad,	1430	77	Higher Standard. Prizes for General Merit and Civil Engineering
2	Grant, F. A.,	Mechanics' School, Leeds, England,	1421	77	Higher Standard 'Key Memorial' Prize for Estimating. Prize for Surveying. Qualified in Photography
3	McDowell, W.,	Loc.-Sergt., 2nd West Yorkshire Regiment,	1408	78	Higher Standard. Qualified in Photography.
4	Ridha Lal,	District School, Lahore,	1401	78	Higher Standard. Prize for Mathematics
5	Fairweather, A.,	Corporal, 1st East Lancashire Regiment,	1396	75	Higher Standard. Lieut.-Col. Brandreth's Prize for Note Books. Prize for Photography
6	Hind Lal,	Govt. Upper School, Delhi,	1390	75	Higher Standard. Prize for Drawing. Qualified in Photography
7	Upson, D.,	Loc.-Corporal, 1st Suffolk Regiment,	1367	74	Higher Standard. Qualified in Photography
8	Siva Pada Das,	Mission School, Meerut,	1337	73	Higher Standard.
9	Maya, C. A.,	La Martinière, Lucknow,	1317	71	Higher Standard. Qualified in Photography.
10	Chandi Prasad,	District School, Lahore,	1287	64	
11	Whitman, F. W.,	Loc.-Cpl., 2nd Scottish Rifles,	1133	61	
12	Patterson, R. T.,	Driver, K.-B. R. H. A.,	1126	61	
13	Scott, J.,	Corpl., 2nd Northumberland Fusiliers,	1108	60	Qualified in Photography.
14	Cocksedge, B.,	Corporal, Royal Engineers,	1068	60	Failed.
15	Bushamber Nath,	Govt. Upper School, Delhi,	1068	58	
16	Sellema, S.,	2nd Corpl., Royal Engineers,	1058	57	
17	Ranjit Singh,	Govt. Upper School, Delhi,	1027	56	
18	Durgapada Mukerji,	London Mission Institution, Benares,	1017	55	
19	Morison, C.,	Corpl. 1st Bn. Rifle Bde,	940	51	Failed.
20	Northridge, T.,	Private, 2nd Northumberland Fusiliers,	938	51	
21	McGinn, H.,	Loc.-Sergt., 1st East Lancashire Regt.,	753	41	Failed.

1885.

No.	Names.	Rank and Corps, and where educated.	Mark passed.	Percent.	Remarks.
<i>First Year, (Special Class).</i>					
1	Lafoue, G.,	.. Sergt., 4-1, Ia. Dn, R. A.,	1835	73	} <i>Higher Standard.</i> } Qualified in Photography.
2	Smith, J.,	.. 2nd Corporal, Royal Engns,	1844	78	
3	Hand, F.,	.. Private, 2nd Scottish Rifles,	1879	69	
4	Lambert, V E.,	.. 2nd Corporal, Royal Engns,	1186	64	
<i>LOWER SUBORDINATE CLASS.</i>					
<i>(Full Marks, 1700).</i>					
<i>Sub-Officers, (Military)</i>					
1	Sawan Singh,	.. Sepoy, 14th Sikhs,	1022	60	} <i>Failed.</i>
2	Hukam Singh,	.. Sepoy, 26th P N L,	812	48	
3	Mahesh Prasad,	.. Sowar, 8th B C,	808	48	
4	Ram Singh,	.. Sepoy, 25th P N I,	719	42	
5	Hakim Hay,	.. Sowar, 8th B. C,	690	41	
6	Hardar Beg,	.. Sowar, 8th B. C,	625	37	
<i>Sub-Officers, (Civil).</i>					
<i>(Class A or D).</i>					
1	Munshi Ram (1), A ..	Kapurthala,	1890	82	Prizes for General Merit and Mathematics.
2	Baro Lal, A ..	Saharanpur,	1900	77	Prize for Surveying
3	Chhajaj Mal, A ..	Gurdaspur,	1281	75	Prize for Civil Engineering.
4	Kripa Ram, A ..	Gurdaspur,	1278	75	Prize for Languages.
5	Mitr Sen, A ..	Saharanpur,	1278	75	
6	Bhagwati Prasad, A ..	Meerut,	1268	75	
7	Ram Prasad, A ..	Meerut,	1223	72	Prize for Estimating.
8	Jwala Singh, B ..	Mardan,	1190	70	
9	Mukat Lal, A ..	Gurdaspur,	1182	70	Failed.
10	Kashu Ram, A ..	Jullundur,	1171	69	
11	Ram Chandr, A ..	Meerut,	1161	68	
12	Bansi Lal, A ..	Kapurthala,	1156	68	
13	Khairuddin, A ..	Lahore,	1156	68	
14	Raghupat Ray, A ..	Balasabahr,	1146	67	
15	Munshi Ram (2), A ..	Meerut,	1132	67	
16	Nurul Islam, B ..	Amritsar,	1117	66	Prize for Drawing.
17	Hararan Das, A ..	Meerut,	1109	65	
18	Mizan Bakshah, B ..	Amritsar,	1074	63	Failed.
19	Tula Ram, A ..	Aligarh,	1064	63	
20	(Sanwan Lal), A ..	Kasauli,	1059	62	Failed
21	Tara Chand, A ..	Patiala,	1056	62	
22	Muhammad Zakaria, A ..	Saharanpur,	1046	62	
23	Mukta Prasad, B ..	Benares,	1029	61	
24	Prabhu Lal, A ..	Roorkes,	1015	60	
25	Har Prasad, A ..	Balasabahr,	998	59	
26	Prithi Ram, A ..	Umballa,	971	57	Failed.
27	Bhish Singh, A ..	Patiala,	948	56	
28	Abdul Hadi, B ..	Amritsar,	944	56	Failed.
29	Muhammad Kutta Khan, B ..	Saharanpur,	941	55	
30	Bubba Singh, A ..	Kapurthala,	938	55	
31	Gajar Mal, A ..	Hoshiarpur,	935	55	

1885.

No.	Name.	Rank and Corps, and where educated.	Mark gained.	Period.	Remarks.
32	Mekand Lal,	B .. Min Mir,	.. 808	53	Failed.
33	Mashak Ahmad,	B .. Dehra,	.. 856	50	
34	Altaf Hassan,	B .. Cawnpore,	.. 880	49	
35	Kundan Lal,	A .. Saharanpur,	.. 765	48	
36	Talal Ram,	A .. Patiala,	.. 810	38	
37	Har Prasad,	B .. Lahore,	.. 808	36	

1886

ENGINEER CLASS
(Full Marks, 3450).

1	Rala Ram,	.. District School, Hoshiarpur,	2626	57	Higher Standard Council of India Prize of Rs 1000 as the most distinguished Student. The Thomason Prize of Rs. 250 Cantley Gold Medal for Mathematics LA-Col Brandreth's Prize for Civil Engineering General MacLagan's Prize for Experimental Science. Qualified in Photography.
2	Shoe Nath,	.. Govt. College, Lahore,	2626	76	Higher Standard. Rai Bahader Kunhya Lal's Gold Medal. Qualified in Photography.
3	Katadia Sukal,	.. Mex Central College, Allahabad,	2456	71	Higher Standard Qualified in Photography
4	Wallace, C. H.,	.. St. George's College, Mussoorie,	2359	68	Prizes for Surveying, Drawing, and Photography.
5	Anthony, A. D.,	.. Munro's School,	2184	63	Higher Standard.
6	Raja Ram,	.. Govt. College, Lahore,	2181	63	
7	Maya, A. B.,	.. La Martinière, Lucknow,	2094	61	
8	Saluk Chandra,	.. Mex Central College, Allahabad,	2081	60	
9	Wall, E.,	.. La Martinière, Lucknow,	2073	60	The Thomason Gold Medal for best Engineering Design.

UPPER SUBORDINATE CLASS.

(Full Marks, 1850).

1	Reynolds, G.,	.. Lawrence M. Asylum, Samwar,	1548	84	Higher Standard Prizes for General Merit, Civil Engineering and Drawing Qualified in Photography
2	Zahiruddin Ahmad,	.. Govt. College, Lahore,	1467	79	Higher Standard Qualified in Photography.
3	Bustable, J.,	.. Bombr., 8-1 West Dn., RA,	1400	78	
4	Syama Charan Ghose,	.. Uttarpara Govt. School,	1386	75	Higher Standard 'Key Memorial' Prize for Retaining.
5	Chaffa Singh,	.. Barilly College,	1383	75	Higher Standard.
6	Bunker, E.,	.. Lawrence M. Asylum, Samwar,	1378	74	Higher Standard Prize for Surveying. Qualified in Photography.

1886.

No	Name.	Rank and Corps, and where situated.	Marks gained.	Percent.	Remarks.
7	Hari Bhuvan Makurji,	City College, Calcutta, ..	1887	78	<i>Higher Standard.</i> Prize for Mathematics.
8	Fransiston, W J,	.. Gunner, E-4, R A, ..	1849	73	
9	Kari Pada Mahtia,	.. Victoria School, Ghazipur, ..	1849	73	
10	Kamta Prasad,	.. Agra College, ..	1806	71	
11	Darrant, J A. S,	.. La Martinère, Lucknow, ..	1399	70	
12	O'Leary, C,	.. La Martinère, Lucknow, ..	1264	68	
13	Basheer Nath,	.. District School, Delhi, ..	1262	68	
14	Johns, H L,	.. Corporal, 1st Worcestershire Regiment, ..	1246	67	
15	Allardys, P,	.. Lee-Corporal, 1st Suffolk Regiment, ..	1228	66	
16	Caldecourt, G F. J,	.. Private, 2nd Norfolk Regt., ..	1227	66	
17	McGoldrick, J M,	.. Pte, 6th Dragoon Guards, ..	1224	66	
18	Pigott, H,	.. La Martinère, Lucknow, ..	1220	66	Qualified in Photography.
19	Brown, J W,	.. Corporal, Royal Engineers, ..	1211	65	<i>Higher Standard</i> Lt.-Colonel Ikandresh's Prize for Note Books.
20	Holder, E,	.. St George's College, Munster, ..	1207	65	<i>Higher Standard</i>
21	Bone, T,	.. La Martinère, Lucknow, ..	1196	65	<i>Higher Standard.</i> Prize for Photography.
22	Sukh Dial,	.. Govt College, Hoshiarpur, ..	1188	64	<i>Higher Standard.</i>
23	Booth, G,	.. Gunner, F-1, R. A, ..	1189	63	
24	Barry, C,	.. Loc-Serge, 2nd Cheshire Regiment, ..	1112	60	
25	Sherridan, F,	.. Gunner, N-8, R. A, ..	1111	60	
26	Collins, J,	.. Bombr, 4-1, La 12 ^e , R. A., ..	1110	60	
27	James, W,	.. Sergeant, 1st Royal Irish Fusiliers, ..	1108	60	
28	Jaswant Rai,	.. Mission School, Lahore, ..	1085	67	
<i>First Year, (Special Class).</i>					
1	Farrington, G,	.. Loc-Sergt, 2nd Warwickshire Regiment, ..	1631	83	<i>Higher Standard.</i>
2	Gibson, C,	.. Sergeant, Royal Engineers, ..	1448	76	
3	Leigh, A,	.. Sergt, 3rd Dragoon Guards, ..	1410	76	
4	Inghy, R,	.. Sergt, 1st East Lancashire Regiment, ..	1324	72	
5	Russell, M,	.. Loc-Corpl, 1st Leinster Regiment, ..	1280	68	
LOWER SUBORDINATE CLASS.					
<i>(Full Marks, 1700).</i>					
<i>Sub-Deversary—(Class A or B).</i>					
1	Abdul Latif, A Bookies, ..	1867	80	Prizes for General Merit, Drawing and Estimating
2	Joshua Ezekiel, A Meerut, ..	1866	80	Prizes for Civil Engineering and Surveying.
3	Prae Lal,	.. A .. Hoshiarpur, ..	1320	78	
4	Jang Lal,	.. A .. Agra, ..	1315	77	

1886.

No.	Name.	Rank and Corps, and where educated.	Marks gained.	Percent.	Remarks.
5	Sikandar Ali, B	Amritsar,	1255	74	Prize for Languages.
6	Mangal Singh, A	Roorkes,	1245	73	
7	Rahim Baksh, A	Saharanpur,	1244	73	
8	Bhawanbhar Sahai, B	Meerut,	1236	73	
9	Mahammad Ibrahim, B	Saharanpur,	1229	72	
10	Naram Singh, A	Panala,	1207	71	
11	Bodh Singh, A	Muzaffarnagar,	1198	71	
12	Raghunath Das, A	Bijnor,	1189	70	
13	Ganesh Lal, A	Kasauli,	1187	70	
14	Janit Prasad, A	Roorkes,	1171	69	Prize for Mathematics.
15	Indr Singh, A	Ludhiana,	1150	68	
16	Nathu Ram, A	Umballa,	1147	68	
17	Sri Ram, B	Bijnor,	1147	68	
18	Gopal Sahai, A	Roorkes,	1127	66	
19	Kabar Singh, A	Ludhiana,	1120	66	
20	Mul Chand, A	Ilujpur,	1116	66	
21	Har Swarup, A	Balainahab,	1114	66	
22	Kashin Ali, A	Roorkes,	1113	66	
23	Nand Lal (1), A	Roorkes,	1098	65	
24	Ganga Sahai, A	Meerut,	1090	64	
25	Kanj Mal, A	Meerut,	1087	64	
26	Jamat Rai, B	Bulandshahr,	1085	64	
27	Manohi Lal, B	Rawal Pindi,	1083	64	
28	Ram Swarup (2), A	Saharanpur,	1081	63	
29	Har Lal, B	Batli Banki,	1068	63	
30	Hedder Ali, A	Ludhiana,	1062	63	
31	Paras Ram, A	Muzaffarnagar,	1056	62	
32	Baj Nath, A	Meerut,	1058	62	
33	Manohi Ram (1), A	Kasauli,	1051	62	
34	Kash Ram, A	Panala,	1047	62	
35	Meesah Ram (2), A	Saharanpur,	1029	61	
36	Sadik Ali, B	Aligarh,	1014	60	
37	Lakh Raj, A	Kasauli,	1010	59	
38	Nazir Hassan, B	Partabgarh,	1009	59	
39	Kundan Lal, A	Roorkes,	994	59	
40	Ram Prasad, A	Muzaffarnagar,	990	58	
41	Abdul Hadi, B	Huwer,	989	58	
42	Nabi Baksh, B	Partabgarh,	981	57	
43	Nand Lal (2), A	Aligarh,	987	56	
44	Bahad Singh, B	Amritsar,	908	53	
45	Ram Swarup (1), A	Gurdaspur,	870	51	Failed.
46	Bhagwat Swarup, A	Roorkes,	868	51	

1887.

ENGINEER CLASS.

(Full Marks, 2450).

1	Chanda Lal, P. D.,	Govt. College, Lahore,	2378	60	Higher Standard Council of India Prize of Rs. 1,000 as the most distinguished Student. The Thomson Prize of Rs. 250 Prize for Drawing. Qualified in Photography.
---	--------------------	------------------------	------	----	--

1887.

No	Name.	Rank and Corps, and where educated.	Merits gained	Prizes	Remarks
2	Schönemann, F. W.,	St. George's College, Mussoorie,	2244	85	Prizes for Surveying and Photography
8	Shupat Rai,	Govt. College, Lahore,	2208	63	Cantley Gold Medal for Mathematics. Rai Bahadur Kunhya Lal's Gold Medal. Qualified in Photography
4	Taylor, R. E.,	Mussoorie School,	2169	63	Qualified in Photography
5	Blant, R. A.,	La Martinière, Lucknow,	2167	63	Lieut.-Col. Brandreth's Prize for Civil Engineering.
6	Smith, W. F.,	La Martinière, Lucknow,	2139	62	Qualified in Photography.
7	Purves, E. H.,	La Martinière, Lucknow,	2104	61	
8	Ganga Ram,	Govt. College, Lahore,	2092	61	General MacLagan's Prize for Experimental Science
9	Wollaston, A. H.,	St. George's College, Mussoorie,	2064	60	The Thomson Gold Medal for best Engineering Design.
10	Anthony, C. E.,	Mussoorie School,	2054	59	
11	Asama Sarap,	Fyzabad High School,	1962	57	
UPPER SUBORDINATE CLASS.					
(Full Marks, 1880).					
	Old, F. S.,	Dioecesan School, Naini Tal,	..	..	{ Higher Standard. Posted to Burma as Apprentice Overseer before close of Session. Qualified in Photography.
	McLean, F. J.,	St. Peter's College, Agia,	..	..
2	Jenkins, C.,	Lawrence V. Asylum, Sanaur,	1282	75	Higher Standard. Prizes for General Merit and Surveying. Qualified in Photography
2	Naylon, H.,	Corpl., D-1, R. Artillery,	1871	74	Higher Standard. Prize for Drawing
3	Madho Das,	District School, Amritsar,	1860	73	Higher Standard. Rai Bahadur Kunhya Lal's Silver Medal.
4	Jogendra Nath Mukra,	Government High School, Lahore,	1346	72	Higher Standard.
5	Stock, W.,	Corporal, 1st King's Own Horse Grens.,	1335	72	Higher Standard. Prizes for Civil Engineering & Key Memorial Prize for Sketching
6	Colhua, W. J.,	Lieut.-Corpl., 1st West Riding Regt.,	1325	72	Higher Standard. Prize for Photography
7	Barj Nath Sahas,	M. A. O. College, Aligarh,	1308	70	Higher Standard. Prize for Drawing
8	Gibbons, J. H.,	Lieut.-Sergt., 2nd Devonshire Regt.,	1290	69	Higher Standard. Qualified in Photography.
9	Kunming, J. C.,	Boys' High School, Lahore,	1256	68	
10	Howard, H.,	Gunner, 8-1, London Dr., Royal Artillery,	1189	64	Prize for Mathematics.
11	Chajin Singh,	Government High School, Meerut,	1179	64	
12	Zitya Nand,	Government School, Delhi,	1178	64	
13	McCaun, C. H.,	La Martinière, Lucknow,	1163	63	
14	Murray, T.,	Gunner, G.A., R. H. Artillery,	1145	62	Lieut.-Col. Brandreth's Prize for Note Books.
15	Parkins, A. R.,	St. George's College, Mussoorie,	1065	59	

1	Jaganmoh,	A., Meerut,	1323	70	Prize for General Merit. Rai Bahadur Kunhya Lal's Silver Medal and Prizes for Drawing and Surveying
2	Bhagwan Das (1), A	Bijnor,	1318	78	Prizes for Mathematics and Civil Engineering
3	Matsuda Lal,	A., Meerut,	1311	77	Lala Behari Lal's Prize for Languages
4	Makbul Hussain,	B., Karnal,	1343	73	
5	Abdul Hamid,	B., Lahore,	1242	73	
6	Shikhar Chaud,	A., Saharanpur,	1313	71	Prize for Estimating.
7	Balram Singh,	B., Kapurthala,	1201	71	
8	Bhagwan Das (2), A.	Delhi,	1189	70	
9	Mahmud Abdul Ghani,	A., Lahore,	1183	70	
10	Abdul Ghafoor Khan,	A., Saharanpur,	1179	69	
11	Ghulam Ghana,	A., Roorkhee,	1170	69	
12	Raja Ram,	B., Jhelum,	1158	68	
13	Bansa Ram,	A., Lahore,	1151	68	
14	Mumtaz Hussain,	A., Roorkhee,	1137	67	
15	Shiv Dayal,	B., Jullundur,	1135	67	
16	Sara Usha,	A., Kapurthala,	1123	66	
17	Prithvi Lal,	A., Meerut,	1107	65	
18	Nand Lal,	B., Sialkot,	1100	65	
19	Tota Ram,	A., Musafarnagar,	1088	64	
20	Muhammad Saifullah,	B., Roorkhee,	1085	64	
21	Muhammad Ali,	A., Rohtak,	1077	63	
22	Arjun Singh,	B., Dera Ghazi Khan,	1073	63	
23	Bhagrat Singh,	A., Saharanpur,	1063	63	
24	Ghulam Hussain,	B., Haridwar,	1058	62	
25	Kishori Lal,	B., Muttra,	1054	62	
26	Nand Lal,	A., Muttra,	1053	62	
27	Tangai Singh,	A., Roorkhee,	1044	62	
28	Durga Datt,	A., Delhi,	1029	61	
29	Ghulam Ali Khan,	A., Ludhiana,	1025	60	
30	Rami Baksh,	A., Roorkhee,	1015	60	
31	Harkish,	A., Roorkhee,	1011	60	
32	Gyan Shankar,	A., Roorkhee,	1008	59	
33	Gopal Chaud,	A., Jullundur,	990	59	
34	Zugham Hussain,	A., Saharanpur,	999	59	
35	Jwala Prasad,	A., Musafarnagar,	973	58	
36	Bhyan Lal,	B., Meerut,	971	57	

YEARLY LIST.

1897.

No	Names.	Rank and Corps, and where educated.	Mark obtained	Remarks.
37	Shimabhu Nath,	A.. Musaffarnagar,	.. 840/55	
38	Dhanraj Lal,	A.. Bulandshahr,	.. 831/55	
39	Kundan Lal,	A.. Roorkee,	.. 894/58	
40	Ram Chandra,	A.. Delhi,	.. 700/41	Failed.

1898.

ENGINEER CLASS. (Full Marks, 3500).

1	Perry, H. W.,	.. St. Paul's School, Darjeeling.	2749/79	The Thomson Gold Medal for best Engineering Design. Lt.-Col Brandreth's Prize for Civil Engineering. General Macdonald's Prize for Experimental Science. Prizes for Surveying and Drawing. Qualified in Photography.
2	Eaglesome, J.,	.. Mussoorie School,	2715/78	Higher Standard Council of India Prize of Rs. 1,000. Cantley Gold Medal for Mathematics and Prize for Photography.
3	Knight, W. E.,	.. La Martinière, Lucknow, ..	2365/68	} Qualified in Photography.
4	French V O,	.. Bishop Cotton School, Simla,	2348/67	
5	Devi Das,	.. Govt. College, Lahore, ..	2288/65	
6	Brama Charan Ghose,	.. Munr College, Allahabad, ..	2219/64	Rai Bahadur Kunhya Lal's Gold Medal. Qualified in Photography.
7	Sharpe, P. St. J.,	.. La Martinière, Lucknow, ..	2187/68	
8	Bishan Sarup,	.. Govt. College, Lahore, ..	2138/61	
9	Bewick, H. L.,	.. Sp. Cotton School, Simla,	2097/60	
10	Ganesh Das,	.. Govt. College, Lahore, ..	1978/67	
11	Parves, F. M.,	.. La Martinière, Lucknow, ..	1871/67	
12	Makhan Lal,	.. Govt. College, Lahore, ..	1864/54	

UPPER SUBORDINATE CLASS.

(Full Marks, 1850)

1	Müller, F. O. T.,	.. La Martinière, Lucknow, ..	1474/80	Higher Standard Prize for General Merit. Thomson Silver Medal for Civil Engineering. Prizes for Drawing, Surveying, Photography and 'Key Memorial' Prize for Estimating.
2	Sarendra Nath Mitra,	.. Lahore,	1335/72	Higher Standard Cantley Silver Medal for Mathematics, and Rai Bahadur Kunhya Lal's Silver Medal. Qualified in Photography.
3	Mia Singh,	.. Jeypore,	1293/71	Higher Standard Qualified in Photography.
4	Ganeshi Lal (I),	.. Roorkee,	1294/70	Higher Standard
5	Jolly, W. F.,	.. La Martinière, Lucknow, ..	1286/70	Qualified in Photography.

1868.

No.	Name.	Rank and Corps, and where educated.	Marks secured	Percent	Remarks.
6	Copeman, N,	Lee-Corpl, 2nd Norfolk Regiment,	1263.68		Higher Standard. Qualified in Photography.
7	Taj Ram,	Abbottabad,	1280.63		
8	Brown, C. F,	La Martinière, Lucknow,	1266.63		Higher Standard.
9	Blakborough, A,	Private, 2nd Norfolk Regt.,	1233.67		
10	Parke, F W,	Gunner, D.-A., R. H. A.,	1226.66		Lt.-Col. Brandrath's Prize for Note Books.
11	Ganesh Lal (2),	Bijnor,	1225.66		Higher Standard.
12	Sri Krishna,	Ferozepore,	1209.64		
13	Kline, B J,	St. Peter's College, Agra,	1203.64		Qualified in Photography.
14	Beecott, J. H W,	Private, The Carabuniers,	1189.64		
15	Sai Mokand,	Delhi,	1179.64		
16	Durga Prasad,	Roorkee,	1145.63		
17	Hardinge, A,	St. Peter's College, Agra,	1139.63		
18	Cromp, E A,	La Martinière, Lucknow,	1137.63		
19	Johnson, A B	La Martinière, Lucknow,	1116.61		
20	Raghubar Dayal,	Balandshahr,	1093.59		
21	Jordan, C J,	Gunner, L.-4, Royal Art'y,	1027.56		
22	D'Russell, E,	St. Peter's College, Agra,	993.54		
23	Banabhar Nath,	Jullundur,	945.51		
24	Prambar Das,	Boberkuch,	945.51		Failed
25	Marten, H W,	Roorkee,	943.51		
First Year, (Special Class).					
1	Packer, A,	Lee-Sgt., 1st Hants Regt.,	1442.78		Higher Standard
2	Hooge, L T,	Corporal, The Carabuniers,	1210.65		
LOWER SUBORDINATE CLASS.					
(Full Marks, 1700)					
Sub-Overseers—(Class A or B)					
1	Devi Sahay,	A .. Rewari,	1508.88		Prize for General Merit. Rai Bahadur Kushya Lal's Silver Medal Prize for Mathematics, Civil Engineering, Surveying, Estimating and Languages.
2	Muhammad Yusuf, B	Roorkee,	1330.78		Prize for Drawing
3	Firoz Ali Khan, A ..	Roorkee,	1290.76		
4	Amir Bakhtsh, A ..	Ludhiana,	1249.74		
5	Kundan Lal, B	Jhalawar,	1242.73		
6	Gajda Mal, A ..	Bahranpur,	1231.72		
7	Nanak Chand, A ..	Jhalawar,	1226.71		
8	Atta Ulla, A ..	Ludhiana,	1206.71		
9	Munshi Ram, A	Ludhiana,	1205.71		
10	Ram Karan Das, A	Meerut,	1174.69		
11	Bansa Dhar, A ..	Meerut,	1149.68		
12	Ram Chandr (1), A ..	Meerut,	1144.67		
13	Ram Swarup, A ..	Balandshahr,	1131.67		
14	Ram Samra, A ..	Bohtak,	1127.67		
15	Ganga Bishe, A	Ludhiana,	1115.66		
16	Tilok Singh, A	Ludhiana,	1108.65		

1888.

No.	Name	Rank and Corps, and where educated	Age at entry	Remarks
17	Gaindan Lal, A.	Roorkes,	1104 65	
18	Sandar Singh, A.	Amritsar,	1084 65	
19	Jwala Swarup, B.	Umballa,	1084 65	
20	Hansra Singh, A.	Jallundar,	1082 65	
21	Harnand Lal, A.	Moradnagar,	1082 64	
22	Sandar Lal, B.	Meerut,	1078 64	
23	Wazir Ali, A.	Jallundar,	1031 60	
24	Karta Krishna, B.	Hoshiarpur,	1017 60	
25	Abdul Aziz, A.	Moradnagar,	1016 60	
26	Atar Singh, A.	Roorkes,	1007 59	
27	Harnam Singh, A.	Jahangirpur,	999 59	
28	Dhan Ram, B.	Meerut,	982 59	
29	Bekhtawar Singh, B.	Meerut,	960 57	
30	Sri Ram, A.	Pakala,	954 56	
31	Naurang Chand, A.	Kapurthala,	900 53	
32	Narpal Singh, B.	Multan,	874 51	
33	Asie-ol-Haq, A.	Roorkes,	869 48	Failed.
34	Syad Wazir Hassan, B.	Rawal Pindi,	745 44	
35	Shyam Sandar, B.	Ferozepore,	1112 65	
36	Mangal Singh, A.	Ludhiana,	908 58	
37	Makhan Lal (2), B.	Umballa,	759 45	Expelled.
38	Ram Chand (2), B.	Chakrata,	696 41	

1889

ENGINEER CLASS.

(Full Marks, 2450).

1	Chandu Lal,	St. Stephen's College, Delhi,	2352 74	Higher Standards Council of India Prize of Rs. 1,000. The Thomason Prize of Rs. 250
2	Muller, H. A. C.,	Mr. Sheshan's, Munscoria,	2436 71	General MacLagan's Prize for Experimental Science Qualified in Photography
3	Chandu Lal, P. C.,	Govt. College, Lahore,	2467 70	La-Chol Brandreth's Prize for Civil Engineering Qualified in Photography
4	Ives, H. W. W.,	Mr. Sheshan's, Munscoria,	2355 65	Higher Standards Council Gold Medal for Mathematics
5	Miri Maj,	M Anglo-Oriental College, Aligarh,	2220 65	Ras Bahadur Kumbha Lal's Gold Medal Qualified in Photography
6	Bates, F.,	La Martinière, Lucknow,	2228 64	The Thomason Gold Medal for best Engineering Design. Prize for Photography.
7	Hogan, W. G.,	La Martinière, Lucknow,	2201 64	Prize for Surveying. Qualified in Photography
8	Fateh Chand,	Govt. College, Lahore,	2030 60	Prize for Drawing.
9	O'Neill, W. H.,	Mr. Sheshan's, Munscoria,	1896 56	

1889.

No	Names.	Rank and Corps, and where educated.	Marks obtained	Remarks.
10	Jeffries, A E.,	.. Bp Cotton School, Sumla,	1808 53	} Failed.
12	Ryan, F.,	.. St. George's College, Massachusetts,	1004 45	
UPPER SUBORDINATE CLASS.				
(Part Marks, 1888).				
1	Chitt, F A.,	.. Lee-Corpl, 8th Dragoon Guards,	1516 62	Higher Standard. Prizes for General Merit. Thomason Silver Medal for Civil Engineering. Prizes for Drawing. Lt.-Col Brandroth's Prize for Note Books. Qualified in Photography.
2	Gray, R.,	.. Corpl, 1st Lancers Regt.,	1441 78	Higher Standard. Cantley Silver Medal for Mathematics. Prizes for Surveying. Qualified in Photography.
3	Long, H.,	.. Lee-Sergt, 5th Lancers, ..	1424 77	Higher Standard. Prizes for Photography.
4	Haycock, H B.,	.. Corporal, 5th Lancers, ..	1304 70	Higher Standard. Qualified in Photography.
5	Gottman, J. C.,	.. St. George's College, Massachusetts, ..	1294 70	Higher Standard.
6	Collins, C.,	.. Corpl, 2nd Devon Regt., ..	1285 70	Higher Standard. Rai Bahadur Kunhya Lal's Silver Medal. Qualified in Photography.
7	Dharm Singh,	.. Lahore,	1282 68	
8	Goodman, W.,	.. St. George's College, Massachusetts, ..	1274 69	Qualified in Photography.
9	Nagendra Nath Burman,	.. Allahabad, ..	1272 68	} Higher Standard.
10	Langhorne, H J.,	.. La Martinière, Lucknow, ..	1266 69	
11	Neeshambr Nath,	.. Wanspuri, ..	1250 66	} Higher Standard. 'Key Memorial' Prize for Recitation.
12	Schembry, F E.,	.. Boys' High School, Lahore,	1247 68	
13	McGann, T.,	.. Corporal, Royal Engineers,	1247 68	} Higher Standard.
14	Garnerson, A.,	.. Lee-Corpl, 2nd Scottish Rifles, ..	1225 67	
15	Keshory Mohan Chatterpy,	.. Bankura, ..	1225 67	} Higher Standard.
16	Haebman, F A.,	.. La Martinière, Lucknow, ..	1220 66	
17	McCart, S.,	.. La Martinière, Lucknow, ..	1194 64	} Higher Standard.
18	Padam Prasad,	.. Ajmere, ..	1187 64	
19	Lloyd, C.,	.. Lee-Corpl, 1st East Surrey Regiment, ..	1184 63	} Higher Standard.
20	Laxmi Shankar,	.. Agra, ..	1156 63	
21	Tarleton, F J.,	.. St. Peter's College, Agra, ..	1025 56	} Higher Standard.
22	Hampton, S H.,	.. St. Peter's College, Agra, ..	1018 55	
23	McCormack, A.,	.. Lee-Corpl, 2nd Royal Artillery, ..	1015 55	} Higher Standard.
24	Muhammad Yusuf,	.. Jubulpore, ..	1008 54	
25	Conroy, F.,	.. St. George's College, Massachusetts, ..	998 54	} Higher Standard.
26	Johnson, C W.,	.. Sergt., 2nd Liverpool Regt.,	957 53	

YEARLY LIST.

1899.

No.	Names.	Rank and Corps, and education.	Age	Marks secured	Percent	Remarks.
LOWER SUBORDINATE CLASS.						
(Full Marks, 1700).						
Sub-Deacons—(Class A).						
1	Danlat Rām,	.. Ludhiana,	...	1898/89	...	Prize for General Mark, Rai Bahadur Kunhya Lal's Silver Medal Prizes for Mathematics, Civil Engineering, Surveying and Estimating.
2	Yakub Ali,	Sialkot,	...	1885/89	...	
3	Kajpat Rai,	.. Kapurthala,	...	1873/81	...	Prize for Drawing.
4	Lachhman Das,	Jhelum,	...	1818/77	...	
5	Shiv Narayan,	.. Jalandhar,	...	1883/75	...	Prize for Languages.
6	Raja Rām,	Ludhiana,	...	1882/75	...	
7	Nathu Rām,	.. Sialkot,	...	1804/71	...	
8	Hira Lal,	.. Hissar,	...	1200/71	...	
9	Raja Singh,	Ludhiana,	...	1184/70	...	
10	Kot Singh,	Cawnpore,	...	1189/69	...	
11	Ziaat Haq,	.. Saharanpur,	...	1184/67	...	
12	Prabhu Dayal,	.. Hissar,	...	1117/66	...	
13	Karam Chand,	Ludhiana,	...	1114/65	...	
14	Paras Singh,	Ludhiana,	...	1108/65	...	
15	Gurchari Lal,	Amritsar,	...	1099/65	...	
16	Ramke Rai,	Ludhiana,	...	1093/64	...	
17	Arya Das,	.. Jalandhar,	...	1087/64	...	
18	Tala Ram,	Ludhiana,	...	1040/61	...	
19	Ghulam Sharaf,	Ludhiana,	...	1018/59	...	
20	Hakim Bathah,	.. Jalandhar,	...	1009/59	...	
21	Bandra Ban,	.. Lucknow,	...	942/55	...	

1899.

ENGINEER CLASS.						
(Full Marks, 2450).						
1	Hopin Behari Chakravarti,	.. Dacca College,	...	2709/79	...	Higher Standards Council of India Prize of Rs. 1,000. The Thomason Prize of Rs. 250. Castley Gold Medal for Mathematics. Thomason Gold Medal for best Engineering Design. Prizes for Civil Engineering and Surveying. Qualified in Photography.
2	Allam, F. W.,	.. Missionary School,	...	2595/75	...	Higher Standards Prizes for Experimental Science. Qualified in Photography.

1890.

No.	Name.	Rank and Corps, and where attached.	Age	Height	Weight	Remarks.
2	Radhika Narain,	.. St. Stephen's College, Delhi,	2429	71		<i>Higher Standard.</i> Rai Bahadur Kamhya Lal's Gold Medal. Qualified in Photography.
4	Jehangir Munchetji Vacha,	.. Elphinstone College, Bombay,	2353	69		<i>Higher Standard</i>
5	Vermine, E.,	.. St. Peter's College, Agra...	2373	69		<i>Prize for Photography</i>
6	Dadi Dayal,	.. London Mission College, Benares,	2312	67		<i>Higher Standard.</i>
7	Dever, R. W.,	.. La Martinière, Lucknow..	2298	67		<i>Prizes for Drawing and Surveying.</i>
8	Shore, J. W.,	.. St. George's College, Mussorie,	2195	64		
9	Drupal Das,	.. Agra College,	2177	63		
10	Raghuvar Dial,	.. Lahore College,	1956	57		
11	Kiki Kumar Ray,	.. Patna College,	1946	57		
12	Otto, F. W.,	.. La Martinière, Lucknow,	1946	57		
13	Newman, C.,	.. Mussoorie School,	1904	55		Absent six months.
UPPER SUBORDINATE CLASS.						
(Full Marks, 1890.)						
1	Lyons, W.,	.. Bomb., 26th Field Bty. R. A.,	1522	59		<i>Higher Standard.</i> Prizes for General Merit, Note Books and Photography.
2	Ahmad Das,	.. Lahore,	1476	50		<i>Higher Standard</i> Rai Bahadur Kamhya Lal's Silver Medal. Prize for Surveying. Qualified in Photography.
3	Sykes, J.,	.. Lee-Corpl, 2nd Derbyshire,	1471	50		<i>Higher Standard.</i> Thomson Silver Medal for Civil Engineering. 'Key Memorial' Prize for Estimating.
4	Latif Hasan,	.. Delhi,	1436	77		<i>Higher Standard</i>
5	Johnson, S. W.,	.. Lee-Corpl, 1st East Kent,	1413	76		<i>Higher Standard</i> Qualified
6	Mul Raj,	.. Ludhiana,	1394	75		in Photography
7	Edwards, H.,	.. Ag. Br, 18th Wn. Dn, R.A.	1394	75		<i>Higher Standard</i>
8	Ram Dayal,	.. Bewari,	1380	75		<i>Higher Standard</i> Cantley Silver Medal for Mathematics.
9	Harman Das,	.. Algorh,	1365	74		<i>Higher Standard.</i>
10	Mustafa Hussain,	.. Kasul,	1342	73		
11	Wilkinson, J. H.,	.. La Martinière, Lucknow,	1336	72		<i>Higher Standard</i> Prize for Drawing. Qualified in Photography.
12	Chanda Lal Kapur,	.. Jullundur,	1309	71		<i>Higher Standard.</i>
13	Jackson, L. J.,	.. La Martinière, Lucknow...	1280	69		<i>Higher Standard</i> Qualified in Photography.
14	Gill, W. T.,	.. Bomb., 59th Fd Bty., R.A.,	1269	68		<i>Higher Standard.</i>
15	Knox, J.,	.. Ag. Bomb., M. R. H. Arty	1253	68		
16	Scott, T. C.,	.. Lee-Sergt, 1st East Kent,	1244	67		
17	Megaura, J.,	.. Lee-Sergt, 2nd E. Sussex,	1233	67		
18	Melvin, E.,	.. St. George's College, Mussoorie,	1223	66		
19	Russell, E.,	.. St. George's College, Mussoorie,	1215	66		<i>Higher Standard.</i>
20	Kelly, A.,	.. La Martinière, Lucknow,	1169	63		

1890.

No.	Names.	Rank and Corps, and where educated.	Mark obtained.	Percentage.	Remarks.
21	Girdhari Lal,	.. Jullunder,	.. 1181	61	<i>Higher Standard</i>
22	Nobin Krishna Bai,	.. Calcutta,	.. 1111	60	
23	Gorman, J,	.. St. George's College, Mysore,	1092	59	
24	Montgomery, M,	.. Corporal, 2nd Highland L. Infantry,	.. 1076	58	
25	Hodgkins, C J,	.. Mr Sheehan's School, Mysore,	.. 1013	55	
LOWER SUBORDINATE CLASS.					
<i>(Full Marks, 1700).</i>					
Sub-Overseers—(Class A).					
1	Tara Chand,	.. Kapurthala,	.. 1288	79	Prize for General Work. Bai Bahadur Kunhya Lal's Silver Medal and Prize for Mathematics.
2	Mahammad Umar,	.. Umballa,	.. 1233	73	
3	Bhagwan Sahay,	.. Meerut,	.. 1233	72	
4	Balwant Singh,	.. Ludhiana,	.. 1210	72	
6	Parmeshri Das,	.. Bareilly,	.. 1206	77	Prizes for Civil Engineering and Estimating
6	Purap Singh,	.. Ludhiana,	.. 1201	74	Prize for Surveying.
7	Dewan Chand,	.. Kapurthala,	.. 1241	73	
8	Sekharin Das,	.. Ludhiana,	.. 1236	73	
9	Natcha Singh,	.. Gurgaonwala,	.. 1233	73	
10	Bhola Singh,	.. Ludhiana,	.. 1229	72	
11	Satowad Singh,	.. Ludhiana,	.. 1228	72	
12	Harnam Das,	.. Jullunder,	.. 1200	71	
13	Laobhman Singh,	.. Kapurthala,	.. 1184	69	
14	Bikrama Singh,	.. Patiala,	.. 1188	69	
15	Isbar Singh,	.. Ferozepore,	.. 1276	69	
16	Chand Khan,	.. Umballa,	.. 1174	68	
17	Said Mahammad,	.. Delhi,	.. 1169	68	Prize for Drawing.
18	Pashora Singh,	.. Sahkot,	.. 1164	68	Prize for Languages.
19	Badha Mal,	.. Sahkot,	.. 1150	68	
20	A Mr Singh,	.. Jullunder,	.. 1147	68	
21	Baru Mal,	.. Murree,	.. 1136	67	
22	Muril Dhar,	.. Murree,	.. 1131	66	
23	Ram Chand,	.. Ludhiana,	.. 1127	66	
24	Rasit-Ullah,	.. Umballa,	.. 1116	66	
25	Kali Sahay,	.. Meerut,	.. 1116	66	
26	Raj Indar Gur,	.. Ludhiana,	.. 1113	65	
27	Kurpa Ram,	.. Kapurthala,	.. 1110	65	
28	Amar Nath,	.. Gurdaspur,	.. 1108	65	
29	Nihal Chand (1),	.. Delhi,	.. 1097	65	
30	Waste Khan,	.. Delhi,	.. 1077	64	
31	Shab Lal,	.. Daulandabahr,	.. 1080	63	
32	Nihal Chand (2),	.. Patiala,	.. 985	58	
33	Dhanpat Bai,	.. Hoshiarpur,	.. 985	58	
34	Ram Das,	.. Kapurthala,	.. 973	57	
35	Balig Ram,	.. Lahore,	.. 973	57	
36	Nabi Bakhsh,	.. Amritsar,	.. 965	57	
37	Girdhari Lal,	.. Kapurthala,	.. 896	52	

YEARLY LIST.

1891.

No.	Names.	Rank and Corps, and where educated.	Mark obtained.	Remarks.
ENGINEER CLASS.				
<i>(Full Marks, 3450).</i>				
1	Narendra Kumar Mitra,	Presidency College, Calcutta,	2889 78	<i>Higher Standard.</i> Connel of India Prize of Rs 1,000. The Thompson Prize of Rs. 250. Cantley Gold Medal for Mathematics General Marlagan's Prize for Experimental Science. Qualified in Photography.
2	Barrie, O B,	La Martinière, Lucknow,	2649 77	<i>Higher Standard.</i> Prizes for Surveying and Photography.
3	Cannell, R,	La Martinière, Lucknow,	2444 71	Thomson Gold Medal for best Engineering Design.
4	Mathews, R. T.,	La Martinière, Lucknow,	2429 70	<i>Higher Standard.</i> Qualified in Photography.
5	Janardan Joshi,	Bareilly College,	2406 70	<i>Higher Standard.</i> Rai Bahadur Kumbha Lal's Gold Medal. Qualified in Photography.
6	Levi, F M,	La Martinière, Lucknow,	2398 69	Col Brandreth's Prize for Civil Engineering. Qualified in Photography.
7	Hughes, H,	Mr Sheehan's, Munrovia,	2350 68	Prize for Drawing.
8	Mellor, C. B,	La Martinière, Lucknow,	2280 65	
9	O'Brien, G J,	La Martinière, Lucknow,	2195 64	
10	Gairde Rao,	Mission College, Lahore,	2174 63	
11	Wilson, R. C. R,	Munrovia School,	2158 63	
12	Edwards, C. J. S,	La Martinière, Lucknow,	2100 61	
13	Taylor, J N,	Mr. Sheehan's, Munrovia,	2008 59	
14	Gilmora, H. S. G,	La Martinière, Lucknow,	1957 57	
15	Benn Pershad,	Govt. College, Lahore,	1770 51	
16	Lakh Raj,	Bareilly College,	-	Withdrawn.
UPPER SUBORDINATE CLASS.				
<i>(Full Marks, 1850).</i>				
1	Hart, F. W,	Lee-Cpl, 4th King's Royal Rifles,	1737 84	<i>Higher Standard.</i> Prize for General Merit. Cantley Silver Medal for Mathematics. Thomson Silver Medal for Civil Engineering. 'Kany Memorial' Prize for Estimating. Col. Brandreth's Prize for Note Books. Prizes for Drawing, Surveying, and Photography.
2	Alex Singh,	Perwaspore,	1584 86	<i>Higher Standard.</i> Rai Bahadur Kumbha Lal's Silver Medal. Qualified in Photography.
3	Walsh, R,	L.-Opl, 2nd Scottish Rifles,	1519 82	
4	Bolton, C,	Serge, 18th East Dn., R. A.	1500 81	
5	Chapman, C,	Lee-Cpl, 4th King's Royal Rifles,	1404 79	<i>Higher Standard.</i> Qualified in Photography.

1891.

No	Name.	Rank and Corps, and where educated.	Mark obtained	Remarks.
6	Moloney, M.	.. Corporal, 1st Royal Irish Fusiliers	1480 79	} Higher Standard.
7	Laddell, W.	.. Lieut.-Sergt, 1st Duke of Cornwall's L. Infy.	1407 76	
8	Narayana Das,	.. Gurdaspur,	1389 76	
9	Sheridan, R. J.	.. Aq. Bomb., 18th Field Bty., R. A.	1876 74	
10	Kashi Prasad,	.. Lahore,	1349 78	} Higher Standard. Qualified in Photography
11	Rup Chand,	.. Sahranpur,	1342 78	} Higher Standard.
12	Miller, H. E. S.	.. St. Peter's College, Agre,	1319 71	
13	Acheson, J. H.	.. Sgt., 1st Bn., Rifle Brigade,	1236 70	
14	Hazari Lal,	.. Gurdaspur,	1281 69	
15	O'Reilly, E.	.. St. George's College, Munsoorie,	1228 66	} Higher Standard.
16	McOutehoun, R.	.. L.-Cpl. 2nd Oxfordshire L.I.	1212 66	
17	Hodgkins, F.	.. Mr. Shashan's, Munsoorie,	1200 65	
18	Thomas, F. H.	.. Lieut.-Sgt., 5th N. I. Lancers,	1195 64	
19	Russell, C.	.. L.-Cpl., 2nd Scottish Rifles,	1186 64	} Higher Standard.
20	Crosby, R.	.. Mr. Shashan's, Munsoorie,	1141 62	} Higher Standard.
21	Rambhadr, H. R.	.. Corporal, A. Battery, R. H.A.	1131 62	
22	Whyte, E.	.. St. George's College, Munsoorie,	1054 57	} Remanded
23	Richardson, F. J.	.. Sergeant, 5th R. I. Lancers,	1024 56	
24	Anderson, J.	.. Cpl., 7th Southern Dn., R. A.	...	
25	Buller, A. C.	.. Lieut.-Cpl., 2nd West Yorkshire,	...	
LOWER SUBORDINATE CLASS.				
(Full Marks, 1700).				
Sub-Officers—(Class A or B)				
1	Kashil Lal,	.. Bulandshahr,	1396 82	Prize for General Merit, Nal Bahadur Kunhya Lal's Silver Medal, Prizes for Mathematics, Civil Engineering, Surveying, and Col. Brandreth's Prize for Estimating
2	Muhammad Latif, A	Gharipur,	1264 74	Ran Bahadur Behari Lal's Prize for Languages.
3	Mamraj Singh, A	Karnal,	1253 74	
4	Gokal Singh, A.	Umballa,	1228 72	
5	Kashiballab, A.	Lucknow,	1220 72	
6	Nandan Singh, A.	Delhi,	1210 71	
7	Amur Chand, A...	Ludhiana,	1200 71	
8	Kapur Chand, A.	Patna,	1197 71	
9	Beant Singh, A	Gurdaspur,	1199 71	
10	Pyare Lal, A	Sahranpur,	1198 70	
11	Qasim Ali, A	Ludhiana,	1195 70	
12	Atma Ram, A.	Umballa,	1170 69	
13	Jagat Ram, A.	Jalandhar,	1165 69	
14	Devi Dal, A.	Ludhiana,	1162 68	
15	Babu Ram, A.	Amritsar,	1142 67	
16	Ramji Das, A.	Delhi,	1141 67	
17	Ahmad Baksh, A	Ludhiana,	1137 67	
18	Lachman Das, A.	Kapurthala,	1126 66	

1891.

No.	Name.	Rank and Corps, and where educated.	Age at Birth.	Age at Death.	Remarks.
19	Stephen Singh,	A.. Umballa,	..	1134/66	
20	Ganpat Rai,	A.. Ludhiana,	..	1132/66	
21	Fateh Muhammad, B.	A.. Lahore,	..	1112/65	Prize for Drawing.
22	Jagan Nath,	A.. Meerut,	..	1108/65	
23	Sarwa Das,	A.. Gurdaspur,	..	1106/65	
24	Khitchi Ram,	A.. Sahibot,	..	1099/65	
25	Bur Singh,	A.. Umballa,	..	1091/64	
26	Shar Singh,	B.. Gopurwala,	..	1091/64	
27	Ram Sahai,	A.. Gujranwala,	..	1078/63	
28	Chanda Lal,	A.. Ulwar,	..	1063/63	
29	Kesar Singh,	B.. Ferozepore,	..	1046/61	
30	Mala Ram,	A.. Ferozepore,	..	1001/59	
31	Munshi Ram,	A.. Kasurhals,	..	987/59	
32	Hoshyar Singh,	A.. Samana,	..	984/58	
33	Abdool Qadir,	A.. Lahore,	..	982/58	
34	Qardas Singh,	A.. Kasurhals,	..	980/58	
35	Narwan Das,	A.. Ludhiana,	..	959/55	
36	Shooky Singh,	B.. Agra,	..	873/52	

1892.

ENGINEER CLASS.

(Full Marks, 3450).

1	Peterson, J M F.,	.. La Martinère, Lucknow, ..	3082/71	Higher Standard. Council of India Prize of Rs. 1,000. Cautley Gold Medal for Mathematics. Thomson Gold Medal for best Engineering Design. Col Brown's Silver Medal for Civil Engineering. Silver Medals for Surveying and Photography.
2	Gillman, J W.,	.. La Martinère, Lucknow, ..	2474/72	Silver Medal for Drawing. Qualified in Photography.
3	West, C H.,	.. La Martinère, Lucknow, ..	2390/69	Higher Standard. General Macdonald's Silver Medal for Experimental Science. Qualified in Photography.
4	Miller, W C W.,	.. La Martinère, Lucknow, ..	2108/61	} Qualified in Photography.
5	Sharpe, W. S.,	.. La Martinère, Lucknow, ..	2087/59	
6	O'Connell, M. J.,	.. St. Peter's College, Agra,	1904/55	
7	Scott, P G.,	.. La Martinère, Lucknow, ..	1681/53	

UPPER SUBORDINATE CLASS

(Full Marks, 1850).

1	Fatherson, J. H.,	.. Sergt., 2nd Dragoon Guards	1489/80	Higher Standard. Silver Medal for General Mark. 'Easy Memorial' Silver Medal for Mathematics. Silver Medal for Surveying. Qualified in Photography.
---	-------------------	-------------------------------	---------	---

1892.

No.	Name.	Rank and Corps, and where educated.	Age at entry.	Remarks.
2	Bartrams, W. F.,	Lee-Corpl, 7th Hussars, ..	142777	<i>Higher Standard.</i> Thomson Silver Medal for Civil Engineering. Silver Medal for Drawing.
3	Thakur Das,	.. Delhi,	141476	<i>Higher Standard.</i> Caudley Silver Medal for Mathematics. Rai Bahadur Kumbha Lal's Silver Medal. Qualified in Photography.
4	Cooper, W. H. A.,	Bombr, 68th Field Battery, B A.,	185578	<i>Higher Standard.</i> Silver Medal for Photography.
5	Gurth, H.,	.. Lee-Corpl, 1st East Lancashire Regt.,	184878	Qualified in Photography. <i>Higher Standard.</i>
6	Taylor, H. J. D.,	.. Lee-Corpl, 2nd Somersetshire L. I.,	184178	
7	Karm Chand,	.. Jullundur,	183472	
8	Hira Khan,	.. Lahore,	183872	
9	Naktha Singh,	.. Saharanpur,	124866	
10	Judge, E. J.,	.. Lee-Corpl, 2nd K O S Borderers,	125868	Qualified in Photography. <i>Higher Standard.</i>
11	Hamilton, W.,	.. Lee-Cpl, 5th R. I. Lancers,	122566	
12	Frasadi Lal,	.. Meerut,	120865	
13	Carr, F.,	.. Sergt., Q. Battery, R. H. A.,	118768	
14	Hume, F.,	.. St. George's College, Munster,	114862	
15	Otto, T. A.,	.. La Martinière, Lucknow,	113869	Remanded Accepted appointments in the Survey Department.
16	Harnam Singh,	.. Delhi,	111260	
17	Barton, H. E.,	.. Lee-Corpl, 2nd R. Scots Fusiliers,	111260	
18	Callan, P.,	.. Sergt., 2nd Scottish Rifles,	..	
19	Bugge, H. W.,	.. St. Fitch's School, Munster,	..	
20	Freeman, J. A.,	.. St. Fitch's School, Munster,	..	Withdrawn.
21	Sullivan, J.,	.. St. George's College, Munster,	..	

LOWER SUBORDINATE CLASS.

(Full Marks, 2500)

Sub-Overseers—(Class A and B).

1	Arjun Singh,	A., .. Ludhiana,	144265	Rai Bahadur Kumbha Lal's Silver Medal for General Merit. Silver Medals for Mathematics, Civil Engineering, and Surveying.
2	Nar Muhammad Khan,	A., .. Umballa,	188380	Silver Medal for Drawing.
3	Waryam Singh,	A., .. Gurdaspur,	184179	
4	Gobind Lal,	A., .. Delhi,	183478	
5	Jaiwant Prasad,	A., .. Delhi,	183378	
6	Abramshi Das,	A., .. Ludhiana,	183378	
7	Rasrang Chand,	A., .. Kapurthala,	129478	
8	Ghulam Qadir,	A., .. Umballa,	127875	
9	Rafiq Ram,	A., .. Jullundur,	126874	

1892.

No.	Names	Rank and Corps, and where educated.	Age	Height	Remarks.
10	Nannibh Rai, A.	Delhi,	1239	78	Rai Bahadur Behari Lal's Silver Medal for Languages.
11	Kheyali Ram, A	Jampur,	1239	78	
12	Rām Lakhan Lal, A	Bellia,	1234	72	
13	Abdāl Asif, A.	Montgomery,	1235	72	
14	Hām Rāp, A	Delhi,	1219	72	
15	Ganga Sabet, A	Delhi,	1198	70	
16	Udām Rām, A	Lahore,	1187	70	
17	Behari Lal, A	Lahore,	1179	69	
18	Kishan Lal, A	Moradabad,	1172	69	
19	Jiwan Lal Datt, A	Gurdāspur,	1168	69	
20	Sital Prasad, A	Sahāraspur,	1153	68	
21	Risā Hasan, A	Sulandshahr,	1139	67	
22	Muhammad Ibrahim, A	Delhi,	1131	67	
23	Nabi Haider Khan, A	Kash,	1115	66	
24	Muhammad Sadiq, B	Kohat,	1109	65	
25	Mahān Singh, A	Ludhiana,	1078	63	
26	Daulat Rām, B	Umballa,	1072	63	
27	Umrao Singh, B	Blyner,	1070	63	
28	Ramu Ram, A	Ludhiana,	1063	62	
29	Amin Chand, A.	Jullundur,	1066	62	
30	Lachmi Chand, A.	Umballa,	1066	62	
31	Azis Ahmed, A.	Indore State,	1044	61	
32	Raghunathas Rai, A.	Uttar State,	1030	61	
33	Sandar Lal, A.	Sahāraspur,	1011	59	
34	Muhammad Amin- uddin, A.	Bhopal State,	926	55	
35	Syed Zawal Hasan, A	Moradabad,	Dead.

1893.

ENGINEER CLASS

(Full Marks, 3450)

1	Chakote Lal,	.. St. Stephen's College, Delhi,	2676	78	Higher Standard Council of India Prize of Rs. 1,000 The Thomason Prize of Rs. 250. Cautley Gold Medal for Mathematics General Madan's Prize for Experimental Science Qualified in Photography.
2	Vernères, A. O.	.. St. Peter's College, Agra,	2656	77	Higher Standard Major Olliborn's Silver Medal for Civil Engineering Silver Medal for Drawing Qualified in Photography.
3	Stanton, V.	.. Munroo School,	2510	78	Higher Standard Thomason Gold Medal for best Engineering Design, Silver Medal for Surveying Qualified in Photography.

1893.

No.	Name.	Rank and Corps, and where educated.	Mark gained.	Percent.	Remarks.
4	Chara Chandra Ray,	Presidency College, Calcutta,	2487	72	Higher Standard. Rai Bahadur Kunhya Lal's Gold Medal. Silver Medal for Photography. Higher Standard. Qualified in Photography.
5	Fzul Chand Rao,	Canning College, Lucknow,	2408	70	
6	McIver, N. A. H.,	Missouri School,	2378	69	
7	Udmi Ram,	St. Stephen's College, Delhi,	2164	62	
8	Jasendra Nath Chatterjee,	Patna College,	2138	62	
9	Pulla Chandra Roy,	Dacca College,	2098	61	Higher Standard. Qualified in Photography.
10	Sita Ram,	Mayo School of Arts, Lahore,	2077	60	
11	Tobit, F. K.,	St. John's College, Agra,	1816	52	
12	Jagat Narain,	St. Stephen's College, Delhi,	1745	51	
UPPER SUBORDINATE CLASS					
(Full Marks, 1850).					
1	Symons, E. G.,	.. Lea-Corpl., 5th B.I. Lancers,	1604	67	Higher Standard. Silver Medal for General Merit. 'Key Memorial' Silver Medal for Estimating. Thomson Silver Medal for Civil Engineering. Silver Medals for Drawing, Surveying and Photography.
2	Diamond, J.,	.. Sgt., 1st Bn. East Lancashire,	1458	70	
3	Gill, W. J.,	.. Lt. Martiniers, Lucknow,	1353	75	
4	Cresly, D.,	.. Lt. Martiniers, Lucknow,	1346	72	
5	Spencer, C. G.,	.. Cpl., 2nd Bn. Manchester,	1334	72	
6	Tivey, W. H.,	.. Sergt., "B" Bty, R. H. A.,	1330	71	Higher Standard. 'Key Memorial' Prize for Estimating. Higher Standard. Qualified in Photography. Higher Standard. Higher Standard. Cantley Silver Medal for Mathematics, & Rai Bahadur Kunhya Lal's Silver Medal.
7	Hilton, E. F.,	.. Lt. Martiniers, Lucknow,	1316	71	
8	Stuart, H. H.,	.. Sergt., 2nd Bn. Northumberland Fusiliers,	1306	71	
9	Parneshari Das,	.. Aligarh,	1276	69	
10	Hamman, G.,	.. Sergt., 1st Bn. Royal West Kent,	1268	68	
11	Kaura Singh,	.. Lahore,	1239	63	Higher Standard.
12	Ragho Ram,	.. Gurdaspur,	1240	68	
13	Webb, A. W.,	.. St. Joseph's Seminary, Naini Tal,	1232	67	
14	Bayliss, C.,	.. Sergt., 1st Bn. Worcester,	1230	66	
15	Chunnu Lal,	.. Delhi,	1226	66	
16	Habata, H. W.,	.. Sergt., 2nd Bn. Derbyshire,	1218	66	Higher Standard. Qualified in Photography. Higher Standard.
17	Wadley, E. W.,	.. Lt. Martiniers, Lucknow,	1212	66	
18	Davenport, D. B.,	.. Lea-Corpl., 16th (Queen's) Lancers,	1202	65	
19	Kitching, W. B.,	.. Sergt., 1st Bn. Hampshire,	1142	62	
20	Nourang Mall,	.. Meerut,	1103	60	
21	Smith, F.,	.. Agt. Bomb., 31st Field Bty., R. A.,	1079	58	

1893.

No.	Name.	Rank and Corps, and where educated.	Marks obtained	Percent	Remarks.
22	Farnon, R. J.,	.. St. Peter's College, Agra,	1074	58	
23	Gilbert, A.,	.. Lieut-Col, 1st Bn Cheahire,	1048	58	
LOWER SUBORDINATE CLASS.					
(Full Marks, 1700).					
Sub-Overseers—(Class A and B)					
1	Talal Rām,	A Kapurthala,	.. 1338	79	Rai Bahadur Kishya Jai's Silver Medal for General Merit Silver Medal for Surveying
2	Muhammed Asim, A.	Gujrat,	.. 1330	78	Silver Medal for Civil Engineering and Drawing. Prize for Electrotype.
3	Rām Gopal,	A.. Delhi,	.. 1326	78	
4	Dwarka Das,	A.. Delhi,	.. 1289	76	
5	Jefar Ali,	A.. Ludhiana,	.. 1288	76	
6	Ajodhya Nath,	A.. Gujrat,	.. 1281	76	Silver Medal for Mathematics
7	Rām Prasad,	A.. Saharanpur,	.. 1280	76	
8	Gūran Ditta,	A.. Lahore,	.. 1260	74	
9	Sewa Rām,	A.. Hissar,	.. 1255	74	
10	Churanji Lal,	A.. Gurdaspur,	.. 1251	74	
11	Raj Kishor,	B.. Rampur,	.. 1241	73	
12	Sarb Dayal,	A.. Ludhiana,	.. 1239	73	
13	Shambhu Nath,	A.. Bijnor,	.. 1236	73	
14	Sahel Singh,	A.. Jalandhar,	.. 1224	72	Rai Bahadur Behari Lal's Silver Medal for Languages.
15	Fateh Singh,	A.. Ludhiana,	.. 1220	72	
16	Dharm Das,	A.. Delhi,	.. 1211	71	
17	Kanj Behari Lal,	A.. Umballa,	.. 1201	71	
18	Rām Chandra,	A.. Saharanpur,	.. 1201	71	
19	Habib Ali,	A.. Gurdaspur,	.. 1197	70	
20	Sarop Lal,	A.. Meerutnagar,	.. 1196	70	
21	Hira Singh,	A.. Ludhiana,	.. 1157	68	
22	Shām Lal,	A.. Delhi,	.. 1155	68	
23	Ramdeo Singh,	A.. Delhi,	.. 1144	67	
24	Munshi Rām (1),	A.. Jalandhar,	.. 1141	67	
25	Munshi Rām (2),	A.. Ludhiana,	.. 1131	67	
26	Kishan Lal,	A.. Delhi,	.. 1128	66	
27	Rām Das,	A.. Ludhiana,	.. 1105	65	
28	Natthe Singh,	A.. Lahore,	.. 1103	65	
29	Mai Chand,	A.. Hazara,	.. 1104	65	
30	Abdul Rasool,	A.. Umballa,	.. 1098	64	
31	Shankar Lal,	A.. Gurdaspur,	.. 1080	64	
32	Gurdatt Singh,	A.. Gurdaspur,	.. 1070	63	
33	Rām Lal,	A.. Umballa,	.. 1065	63	
34	Kadir Bakht,	A.. Umballa,	.. 1066	63	
35	Sury Narayan,	A.. Unao,	.. 1057	62	
36	Diwan Chand,	A.. Jalandhar,	.. 1018	60	
37	Hasak Chand,	A.. Saharanpur,	.. 925	54	
38	Ahmad Husein,	B.. Meerutnagar,	.. 774	46	Failed
39	Bhawan Lal,	A.. Hissar,	.. ..	..	Withdrawn.

1894.

No.	Name.	Rank and Corps, and where educated.	Marks gained	Percent	Remarks.
ENGINEER CLASS.					
(Full Marks, 3400)					
1	Fitzpatrick, T. B.,	St. George's College, Mysore,	2346	69	<i>Higher Standard</i> Council of India Prize of Rs. 1,000. Silver Medal for Surveying. Qualified in Photography.
2	Kanhaya Lal,	St. Stephen's College, Delhi,	2343	69	<i>Higher Standard</i> Thomason Prize of Rs. 250 General MacLagan's Prize for Experimental Science. Qualified in Photography.
3	Jotindra Mohan Ray,	Presidency College, Calcutta,	2327	68	Raj Bahadur Kanhya Lal's Gold Medal. Qualified in Photography.
4	Rashton, C. E.,	St. Peter's College, Agra,	2306	68	<i>Higher Standard</i> Silver Medal for Photography.
5	Arobinda Prakash Mullick,	Agra College,	2304	68	<i>Higher Standard</i> Castley Gold Medal for Mathematics. Qualified in Photography.
6	Collins, M. B.,	Mussoorie School,	2230	66	Major Chibborn's Silver Medal for Civil Engineering. Silver Medal for Drawing.
7	Roberts, J. M.,	Mussoorie School,	2200	65	Qualified in Photography.
8	Vaughan, F. B.,	La Martinière, Lucknow,	2182	63	
9	Wardle-Jones, A. W.,	La Martinière, Lucknow,	2129	63	
10	Christie, E. S.,	Mussoorie School,	2083	61	Thomason Gold Medal for best Engineering Design.
11	Hardinge, D. H.,	St. George's College, Mysore,	2019	59	
12	Cooper, W. C.,	Bishop Cotton School, Simla,	1864	55	
13	Müller, C. H. A.,	La Martinière, Lucknow,	1861	55	
UPPER SUBORDINATE CLASS					
(Full Marks, 1800)					
1	Botterill, R. O. G.,	Serjt, 1st Bedford Regt,	1542	36	<i>Higher Standard</i> Silver Medal for General Merit. Thomason Silver Medal for Civil Engineering. 'Keay Memorial' Silver Medal for Estimating. Silver Medal for Surveying. Qualified in Photography.
2	Wilkinson, W. L.,	La Martinière, Lucknow,	1407	78	<i>Higher Standard</i> Silver Medal for Drawing. Qualified in Photography.
3	Evernatt, C. T.,	Acc. Bombr, 39th Field Battery, R. A.,	1359	76	<i>Higher Standard.</i> Qualified in Photography.
4	Wallace, E. J.,	Loc. Sgt, 2nd Suffolk Regt.,	1318	73	<i>Higher Standard.</i> Silver Medal for Photography.

1894.

No.	Name.	Rank and Corps, and where educated.	Marks obtained.	Present.	Remarks.
5	Kerwick, F. J.,	.. Agc. Bombr, 40th Field Battery, R.A.,	1315.78		Higher Standard
6	Roberts, H. T.,	.. Mr Sheehan's, Mussoorie,	1285.71		
7	O'Brien, E.,	.. Lt. Martindale, Lucknow,	1275.71		
8	Atikan, A.,	.. Corp'l, 2nd Royal Sussex Regt.,	1270.71		Higher Standard
9	Kerwick, F.,	.. Bombr, "G" Bty, R.H.A.,	1260.70		
10	Sykes, J. W.,	.. Bombr, "C" Bty, R.H.A.,	1258.70		
11	Murray, J. H.,	.. Sergt., 1st Royal Welsh Fusiliers,	1189.67		Higher Standard. Rai Bahadur Kunhya Lal's Silver Medal.
12	Br Bull Dts,	.. Lahore,	1197.67		
13	Churni Lal,	.. Meerut,	1198.66		
14	Piggott, O. R.,	.. Mr Sheehan's, Mussoorie,	1177.65		Failed to qualify. Cartley Silver Medal for Mathematics. Qualified in Photography.
15	Shah Lal,	.. Sialkot,	1163.65		
16	Mooney, T.,	.. Lee-Sergt., 2nd Royal Dublin Fusiliers,	1159.64		
17	Saleg Ram,	.. Lahore,	1154.64		Remanded.
18	Bash Baksh,	.. Umballa,	1066.59		
19	Johnstone, W. R.,	.. Lee-Sgt., 2nd Oxford L.I.,	842.52		
20	Seale, J.,	.. Agc. Bombr, 6th Field Battery, R.A.,			Accepted appointment in the Survey Department. Withdrawn.
21	Williams, P.,	.. St. George's College, Mussoorie,			
22	Hodgkins, F. M.,	.. Mr. Sheehan's, Mussoorie,			

LOWER SUBORDINATE CLASS

(Full Marks, 1680).

Sub-Overseers—(Class A and B)

1	Udai Ram,	A .. Hoshiarpur,	1405.84		Rai Bahadur Kunhya Lal's Silver Medal for General Merit. Silver Medals for Mathematics and Drawing. Rai Bahadur Bohari Lal's Silver Medal for Languages.
2	Sant Ram,	A .. Jalandhar,	1381.81		Silver Medal for Civil Engineering.
3	Ajaj Kumar,	A .. Delhi,	1352.81		
4	Behar Singh,	A .. Gurdaspur,	1350.80		
5	Ratan Lal,	A .. Delhi,	1342.80		
6	Hira Singh,	A .. Patiala,	1338.80		
7	Sardar Narayan,	A .. Delhi,	1317.78		
8	Shankar Das (3), A	.. Lahore,	1290.77		
9	Mahitab Singh,	A .. Lahore,	1283.76		
10	Ganesh Ram,	A .. Bulandshahr,	1274.76		Silver Medal for Surveying.
11	Lakha Ram,	A .. Meerut,	1252.75		
12	Shagat Ram (2), A	.. Sialkot,	1246.74		
13	Gangadhar Das,	A .. Patiala,	1241.74		

1894.

No.	Names	Rank and Corps, and where obtained	Mark	Percentage	Remarks
14	Sant Singh, A.	Lahore,	1221	73	
15	Sahib Chand, A.	Umballa,	1210	72	
16	Lachman Das, A.	Amritsar,	1203	72	
17	Tej Ram, A.	Delhi,	1191	71	
18	Karam Chand, A.	Dera Ghazi Khan,	1188	71	
19	Ghalya Ram, A.	Ludhiana,	1178	70	
20	Kidat Nath, A.	Musaffarnagar,	1169	70	
21	Bhagat Ram (1), A.	Ludhiana,	1160	69	
22	Dalip Singh, A.	Ludhiana,	1150	68	
23	Shri Chand, A.	Delhi,	1148	68	
24	Shankar Das (1), A.	Kapurthala,	1145	68	
25	Halia Ram, A.	Gujranwala,	1142	68	
26	Shitab Rai, A.	Agra,	1130	67	
27	Rabun Baksh, A.	Lahore,	1129	67	
28	Bay Nath, A.	Saharanpur,	1116	66	
29	Lakur Prasad, A.	Bahawalpur,	1108	66	
30	Sham Lal, A.	Moradabad,	1089	64	
31	Pablo Ram, A.	Umballa,	1078	62	
32	Bhagwan Das, A.	Patiala,	1048	57	
33	Aminat Ali, A.	Saharanpur,	997	50	
34	Abdul Rahman, B.	Saharanpur,	954	57	Prize for Ferrottype
35	Fakir Muhammad, A.	Jullundur,	948	56	
36	Bishan Singh, A.	Patiala,	940	56	
37	Brj Lal, B.	Jullundur,	932	56	
38	Wajayati Ram, A.	Patiala,	901	54	
39	Ghulam Muhammad, B.	Umballa,	747	44	
40	Chai Ram, A.	Musaffarnagar,	...	...
41	Ram Sarup, A.	Meerut,	...	...
42	Ram Chand, A.	Gurdaspur,	...	...	Expelled.
43	Raghunath Sahai, A.	Delhi,	...	...

1895.

ENGINEERS CLASS (Full Marks, 3400).				
1	Kalkhoru Sorajit Pa-	Elphinstone College, Bom-	2475	73
	tanck,	bay, ...	...	...
2	Joyce, H. W.,	Blasop's School, Poona,	2386	70
3	Bishan Swarup,	Agra College, ...	2317	68
			Higher Standard Council of India. Prize of Rs. 1,000. Thomson Prize of Rs. 250. Cantley Gold Medal for Mathematics. General Maclean's Prize for Experimental Science. Qualified in Photography.	
			Thomson Gold Medal for best Engineering Design. Major Clibborn's Silver Medal for Civil Engineering. Silver Medals for Drawing, Surveying and Photography.	
			Higher Standard. Rai Bahadur Krishna Lal's Gold Medal. Qualified in Photography.	

1895.

No.	Name.	Rank and Corps, and where educated	Marks gained	Percent	Remarks.
4	Wells, W. R.,	.. St. Joseph's College, Darjeeling, ..	2295	68	<i>Higher Standard. Qualified in Photography.</i>
5	Morgan, J. G.,	.. Dorseton College, Madras, ..	2178	64	
6	Setha Chandra Manlik,	Presy College, Calcutta, ..	2142	63	
7	Wells, H. S.,	.. St. Joseph's College, Darjeeling, ..	2089	61	<i>Qualified in Photography.</i>
8	Edgar Bose,	.. Muir Central College, Allahabad, ..	2045	60	
9	Atmaram,	.. Govt College, Lahore, ..	2032	60	
10	Lee, F. H.,	.. La Martinière, Lucknow, ..	1988	57	<i>Qualified in Photography.</i>
11	Howard, S. W.,	.. La Martinière, Lucknow, ..	1982	57	
12	Symons, R. V.,	.. La Martinière, Lucknow, ..	1827	54	
13	Abunash Chandra Mukerji,	.. Agre College, ..	1619	54	
14	Indra Sahay,	.. Barilly College, ..	1667	49	
15	Bahub Dayal,	.. Queen's College, Benares, ..	1638	48	

UPPER SUBORDINATE CLASS.

(Fall Marks, 1750).

1	Connell, R. B.,	.. La Martinière, Lucknow, ..	1408	80	<i>Higher Standard Silver Medal for General Merit. Qualified in Photography.</i>
2	McDonough, A. D'A.,	Lance-Serjt., 1st Bn R Welsh Fusiliers, ..	1399	80	
3	Smclair, W.,	.. St. Joseph's Seminary, Nai ni Tal, ..	1374	78	<i>Higher Standard. Qualified in Photography.</i>
4	Taylor, J.,	.. Sergeant, 1st Bn Gordon Highlanders, ..	1372	78	
5	O'Farrell, E.,	.. Sergt., 2nd Bn. R Munster Fusiliers, ..	1372	78	<i>Higher Standard. Thomson Silver Medals for Civil Engineering. Qualified in Photography.</i>
6	Hardinge, W. E.,	.. Dp Cotton School, Simla, ..	1369	78	
7	Hall, T. C.,	.. Lieut-Serjt., 1st Bn Norfolk Regiment, ..	1358	76	<i>Higher Standard.</i>
8	Sant Singh,	.. Malian, ..	1353	76	
9	Tomkyns, G. F. W.,	.. Squadron Q-M, Sergeant 11th Hussars, ..	1299	74	<i>Higher Standard. Qualified in Photography.</i>
10	Etches, E. E.,	.. Ag Bomb, 20th Co East Ln, R.A., ..	1279	73	
11	Bailey, H.,	.. Ag Bomb, "A" Battery R. H. A., ..	1258	72	<i>Higher Standard. 'Keay Memorial' Silver Medal for Estimating.</i>
12	Bishambar Das,	.. Saharanpur, ..	1227	70	
13	Sullivan, T. E.,	.. Sergt., 2nd Bn. Royal Irish, ..	1206	69	<i>Higher Standard.</i>
14	Ganpat Lal Gupta,	.. Saharanpur, ..	1184	68	
15	Ryan, P.,	.. Corporal, 7th Co Southern Bn, R. A., ..	1176	67	

1895.

No.	Name.	Rank and Corps, and where educated.	Mark obtained	Percent.	Remarks.
16	Mitchell, A. J.,	.. Lee-Serge, 1st Bn. Norfolk Regiment,	.. 1172	67	<i>Higher Standard.</i>
17	Boermel, W. A.,	.. La Martinère, Lucknow,	.. 1180	66	
18	Siggie, E.,	.. St. Fidelis's School, Moscow,	.. 1138	64	
19	Abdur Rahman,	.. Amritsar,	.. 1118	64	
20	Rahmatullah,	.. Multan,	.. 1018	64	
21	Kota Mal,	.. Allahabad,	.. 963	55	
22	O'Connor, A. M. B.,	.. Lee-Serge, 1st Bn. B Irish Fusiliers,	.. 948	54	
LOWER SUBORDINATE CLASS					
<i>(Full Marks, 1870).</i>					
<i>Sub-Overseers—(Classes A or B)</i>					
1	Ghulam Naki,	A. Ludhiana,	.. 1404	84	Rai Bahadur Kumbha Lal's Silver Medal for General Merit. Silver Medal for Civil Engineering.
2	Tirakh Ram,	A. Kapurthala,	.. 1399	84	Silver Medal for Civil Engineering. Rai Bahadur Behari Lal's Silver Medal for English.
3	Kali Ram,	A. Delhi,	.. 1323	80	Silver Medal for Mathematics.
4	Abdul Rahman,	A. Amritsar,	.. 1342	79	
5	Ram Jas,	A. Lahore,	.. 1292	77	
6	Genda Mal,	A. Umballa,	.. 1279	76	
7	Thakur Das (1),	A. Jullundur,	.. 1271	76	
8	Kashi Ram,	A. Umballa,	.. 1268	76	
9	Kidar Nath,	A. Bijnor,	.. 1263	75	
10	Mehar Lal,	A. Ludhiana,	.. 1263	75	
11	Nigahi Singh,	A. Ludhiana,	.. 1246	75	
12	Ram Narayan,	A. Delhi,	.. 1220	73	Silver Medal for Surveying.
13	Hasan Mohammad,	A. Lahore,	.. 1203	72	
14	Shibcharan Lal,	A. Bareilly,	.. 1193	71	
15	Ali Sakhib,	A. Sialkot,	.. 1177	70	
16	Ghosi Ram,	A. Meerut,	.. 1176	70	
17	Somenkar Das,	A. Saharanpur,	.. 1161	70	
18	Thakur Das (2),	A. Delhi,	.. 1160	69	
19	Ganpat Ram,	A. Jullundur,	.. 1148	68	
20	Rasbir Ahmad,	A. Muzaffernagar,	.. 1140	69	Silver Medal for Drawing.
21	Assi Ram,	A. Umballa,	.. 1141	68	Prize for Engraving.
22	Hooti Prasad,	A. Aligarh,	.. 1140	68	
23	Nadho Ram,	A. Nabha,	.. 1138	68	
24	Dalpat Rai,	A. Patiala,	.. 1127	67	
25	Kanti Nath,	A. Saharanpur,	.. 1120	67	
26	Udho Ram,	A. Delhi,	.. 1118	67	
27	Dewan Chand,	A. Noida,	.. 1117	67	
28	Bihari Lal,	A. Meerut,	.. 1118	67	
29	Rohai Singh,	A. Kapurthala,	.. 1093	65	

1895.

No.	Names.	Rank and Corps, and where educated.	Marks obtained	Remarks.
30	Khitchhai Singh, A.	Cawnpore,	1068.65	
31	Nasir Hossain, A.	Nabha,	1044.63	
32	Gachar Ali, A.	Bijnor,	1036.62	
33	Bhag Singh, B.	Amritsar,	1034.62	
34	Shen Nath, A.	Karnal,	1031.62	
35	Shukla Singh, A.	Meerut,	1013.61	
36	Akbar Hossain, A.	Allahabad,	1007.60	
37	Abdul Shakar, A.	Allahabad,	994.60	
38	Jai Narayan, A.	Karnal,	980.59	
39	Muhammad Din, B.	Lahore,	920.55	
40	Rustam Ali, B.	Patala,	879.53	
41	Bans Mal, A.	Patala,	896.50	Sick Failed to qualify
42	Baldeo Prasad, A.	Amritsar,	..	Excluded.
43	Daya Narayan, A.	Barilly,	..	Excluded.

1896.

ENGINEER CLASS.

(Full Marks, 3400).

1	Scott, E. A.,	La Martinière, Lucknow,	3557.75	Higher Standard. Council of India Prize of Rs 1,000 Thomson Gold Medal for best Engineering Design. Lieut-Col Clibborn's Silver Medal for Civil Engineering Silver Medals for Surveying and Drawing Qualified in Photography
2	Raghubir Prasad Verma,	Muir Central College, Allahabad,	2555.75	Higher Standard Thomson Prize of Rs. 350 Cantley Gold Medal for Mathematics. General Maclean's Prize for Experimental Science. Qualified in Photography
3	Candley, G. W.,	Munroo School,	2317.68	Higher Standard.
4	Triloka Nath,	St. Xavier's College, Calcutta,	2284.67	Higher Standard Rai Bahadur Kunhya Lal's Gold Medal Silver Medal for Photography.
5	Mohit Kanta Sen,	Presidency College, Calcutta,	2267.67	Higher Standard Qualified in Photography.
6	Ata Husain,	Patina College,	2146.63	
7	Ramendra Nath Sen Gupta,	Patina College,	2139.63	
8	Akhil Chandra Chatterji,	City College, Calcutta,	2045.60	Qualified in Photography.
9	Jagat Narain,	Agra College,	2018.59	
10	Sada Siva Misra,	Canning College, Lucknow,	1916.56	
11	O German, C.,	St. George's College, Munroo,	1851.54	

1896.

No.	Names.	Rank and Corps, and where educated	Marks passed.	Percent.	Remarks.
12	Mutemdi Lal,	St. Stephen's Mission Col- lege, Delhi,	1765.69		
18	Rodgers, B. A.,	La Martinière Lucknow,	1711.60		
UPPER SUBORDINATE CLASS.					
(Full Marks, 1750).					
1	Gyde, C. J.,	Sergt., 1st Gordon High- landers,	1675.90		Higher Standard. Silver Me- dal for General Merit. Prizes for Mathematics and Civil Engineering. Silver Medals for Surveying and Photogra- phy. 'Kany Memorial' Sil- ver Medal for Bookkeeping.
2	McKenzie, T.,	Sergt., 2nd A. and S. High- landers,	1421.81		Higher Standard. Qualified in Photography.
3	Holmes, A. H.,	Lea-Corpl., 2nd K O York- shire L. I.,	1404.80		
4	Franman, J. V.,	Sergt., 2nd Durham L. I.,	1397.80		Higher Standard.
5	Flomer, G. H.,	La Martinière, Lucknow,	1370.78		Higher Standard. Silver Me- dal for Drawing. Qualified in Photography.
6	Boorne, P.,	Mr Sheehan's, Munroorie,	1361.78		Higher Standard.
7	Duncan, C.,	Sergt., 2nd A. and S. High- landers,	1361.78		Higher Standard. Qualified in Photography.
8	Myers, F. E.,	Mr Sheehan's, Munroorie,	1339.77		
9	Smith, J. H.,	Corpl., 2nd Durham L. I.,	1332.78		Higher Standard
10	O'Brien, H.,	Sergt., 1st Hampshire Regt.,	1245.71		
11	Faisal Hamid,	Saharsapur,	1235.70		Raja Bahadur Kunhya Lal's Silver Medal
12	Hill, T.,	Lea-Corpl., 5th R I Lancers,	1210.69		Higher Standard.
13	Bishan Singh,	Lahore,	1207.69		
14	Gorman, J.,	Sergt., 2nd Royal Irish Regiment,	1205.69		
15	Hobberd, C. F.,	La Martinière, Lucknow,	1205.69		
16	Duncan, J. E.,	La Martinière, Lucknow,	1169.68		Higher Standard
17	Kent, O.,	Ag Bomb, "H" Battery, R H A.,	1180.67		
18	Hilton, H. R.,	La Martinière, Lucknow,	1145.65		
19	Angan Lal,	Umballa,	1112.64		
20	Uday Ram Gupta,	Saharsapur,	1069.61		
21	Brij Bhusan Sharma,	Balandshahr,	.		Dead.
LOWER SUBORDINATE CLASS					
(Full Marks, 1070).					
Sub-Overseers—(Class A or B)					
1	Jivan Mal,	B ... Gujrat,	1300.31		Raja Bahadur Kunhya Lal's Silver Medal for General Merit. Silver Medals for Civil Engineering and Sur- veying.

1898.

No.	Names.	Rank and Corps, and where stationed.	Marks gained.	Remarks.
2	Khushi Ram, A ..	Kapurthala,	1274 76	
3	Phammen Ram, A ..	Ludhiana,	1266 76	
4	Tika Ram, A ..	Bulandshahr,	1266 76	Silver Medal for Drawing.
6	Thaker Singh, A ..	Patna,	1258 75	
6	Muhammad Ahsan, A ..	Nabha,	1238 74	
7	Atma Ram, A ..	Ludhiana,	1234 74	Silver Medal for Mathematics.
8	Rala Ram, A ..	Naikot,	1207 72	
9	Bansi Ram, A ..	Nabha,	1200 72	
10	Chhajj Ram, B ..	Patna,	1198 72	
11	Haral Ram, A ..	Ludhiana,	1189 71	
12	Bhagat Singh, A ..	Patna,	1182 71	
13	Nathu Lal, A ..	Patna,	1182 71	
14	Sundar Das, A ..	Kapurthala,	1178 71	
15	Niaz Muhammad, B ..	Umballa,	1170 70	
16	Tara Chand, A ..	Karnal,	1166 70	
17	Muni Lal, A ..	Delhi,	1164 70	
18	Beta, A ..	Ecoharpur,	1163 70	
19	Shogun Chand, A ..	Muzaffarnagar,	1150 69	
20	Bihari Lal, A ..	Farukhabad,	1138 68	Prize for Penmanship.
21	Shadi Ram, A ..	Patna,	1129 68	
22	Dm Muhammad, A ..	Gurdaspur,	1129 68	
23	Ramji Das, A ..	Saharsapur,	1114 67	
24	Keshi Ram, A ..	Ludhiana,	1105 66	
25	Debi Prasad, A ..	Bijnor,	1100 66	
26	Jadraj Singh, A ..	Muzaffarnagar,	1095 66	
27	Bhagwan Sahai, A ..	Bulandshahr,	1087 65	
28	Bishamber Das, A ..	Patna,	1079 65	
29	Shibba Singh, A ..	Bijnor,	1078 65	
30	Hardwar Ram, A ..	Ludhiana,	1070 64	
31	Parbhú Lal, A ..	Bara Banki,	1069 64	
32	Ram Lal, A ..	Bulandshahr,	1068 64	
33	Yam Chand, A ..	Muzaffarnagar,	1051 63	
34	Samsulla, A ..	Bulandshahr,	980 59	
35	Maula Baksh, A ..	Lahore,	975 58	
36	Makbul Ahmad, A ..	Saharsapur,	965 58	
37	Shiboharan Das, B ..	Delhi,	907 57	
38	Karm Narayan, A ..	Lahore,	903 54	
39	Gujar Singh, A ..	Ludhiana,	893 54	
40	Muhammad Yousuf, B ..	Saharsapur,	890 53	
Full Marks,			875	
1	Thamman Singh, A ..	Ludhiana,	498	} Special Certificate as 2nd Grade Sub-Overseer.
2	Nathu Ram, A ..	Ecoharpur,	412	
Full Marks,			615	
5	Dikwan Singh, A ..	Patna,	410	} Special Certificate as 2nd Grade Sub-Overseer.

Alphabetical List of Candidates Passed by Direct Examination.

No.	Rank and Name, &c.	Year	Remarks.
ASSISTANT ENGINEERS			
1	Barker, W. R., .. La Martinère, Locknow, ..	1867	
	Dickers, C., ..	1866	
	Brown, W. H., Lieut., .. 7th Regiment,	1869	
	Soll, H., .. England,	1867	
5	Daniell, H., .. Mussoorie School,	1867	
	Dease, P., .. Mussoorie School,	1869	
	Dease, R., .. Mussoorie School,	1871	
	Gustin, W. E., .. Cheltenham College,	1872	
	Hodges, M., .. Local Fund Engr., Oadh.,	1878	
10	Harrischandra Ray, ..	1869	
	Lesdon, A., Lieut., .. Genl. List, Infantry,	1868	
	Little, J. A., Lieut., .. 1-12th Regiment,	1866	
	Longmore, W. H., ..	1866	
	MacKenzie, F., ..	1879	
15	McGowan, P. S., .. Bishop Cotton School,	1874	
	Molesworth, H. B., ..	1878	
	Neill, G. F. E. S., Lieut., .. Royal Artillery,	1868	
	Pannab, H., .. St. Peter's College, Agra,	1870	
	Philpot, O., .. England,	1868	
20	Raymond, Biscoe, Lieut., .. Royal Artillery,	1869	
	Simpson, J. Stuart, .. Local Fund Engr., Oadh.,	1874	
	Smith, Ward, .. Mussoorie School,	1869	
	Sarat Chander Ray, .. Pres. College, Calcutta,	1875	
	Talal Bām, .. Delhi College,	1870	
25	Whish, J. T., Lieut., .. 103rd Regiment,	1867	
	Widnell, A. E. S., .. England,	1866	
27	Wiseman, W., .. Asst. Drawing Master, Thomason College,	1869	
SUB-ENGINEERS			
1	Adams, J., Sergt., R.E., .. Overseer,	1879	
	Ali Muhammad, ..	1861	
	Barnford, C. Sgt., R.E., .. Overseer, 1st grade,	1891	
	Booley, G. H., .. Supervisor,	1869	
2	Boyd, H. A., Sergeant, .. 1st Bn. East Lanc. Regt.,	1864	
	Cargill, W. M., St., R.E., .. Supervisor, 1st grade,	1879	
	Clayton, H. Sergeant, .. 8th Hussars,	1864	
	Clifford, W. H., L.-Sgt., .. 48th Regiment,	1875	
	Corryingham, G. H., Ag. Bomb., .. G - A, R. H. Artillery,	1864	
10	Daly, J. E., ..	1861	
	Douglas, J., ..	1871	
	Edden, J., Sergt., .. Overseer, 1st grade,	1891	
	Engleish, T., .. Supervisor, 1st grade,	1879	
	Gearing, H., Gunner, .. Supervisor,	1870	
15	Ganesh Rai, ..	1864	
	Gibney, J., Private, .. Overseer, 1st grade,	1869	
	Harbert, J., Private, .. Supervisor,	1870	
18	Highway, E., Sgt., R.E., .. Supervisor, 1st grade,	1892	

* Special Class men, and granted Sub-Engineer's certificates.

100 ALPHABETICAL LIST OF CANDIDATES PASSED BY DIRECT EXAMINATION.

No.	Rank and Name, &c.	Year	Remarks.
SUB-ENGINEERS—(continued).			
19	Hayden, B., Sub-Cond., Supervisor, 2nd grade, ...	1894	
20	Hunter, J., Sergeant, 2nd Northumberland Fusil	1884*	
	Hurst, J., Sergeant, ..	1880	
	Jhanda Lal, .. Supervisor,	1880	
	Kelly, F., Sergeant, .. Overseer,	1880	
	Lee, G. A., Private,	1887	
25	Lennox, W., Corporal,	1885	
	Longmore, W. H., .. Prob. Asst. Overseer,	1881	
	Logan, S., Schl. Master, Royal Engineers,	1877	
	McMinn, I., Bomb., .. Overseer, 1st grade,	1871	
	McQuillen, W. J., .. Supervisor,	1887	
30	Malvhill, M., .. Supervisor, 2nd grade,	1874	
	Pace, T., Sergeant, .. Overseer, 1st grade,	1869	
	Phelan, T., Sergeant, Overseer, 1st grade,	1868	
	Porter, J. A., Corporal, Overseer, 1st grade,	1866	
	Radhaya Lal,	1884	
35	Radcliffe, H., Tp S Maj, Overseer, 1st grade,	1869	
	Rogers, J., Private, .. 9th Lancers,	1884	
	Scott, A., .. Supervisor,	1869	
	Simclair, W., Sapper, .. Royal Engineers,	1869	
	Smith, T., .. Supervisor,	1867	
40	Spurr, T., .. Supervisor,	1869	
	Sullivan, E. C., .. Percepsore,	1872	
	Wassman, F. Sub-Cdr, Supervisor, 2nd grade,	1886	
45	Woods, H. C., .. Supervisor,	1868	
OVERSEERS			
1	Anderson, J., L.-Cpl, 26th Regiment,	1874	
	Anantab Singh, ..	1868	
	Atkinson, Sergeant, .. Royal Engineers,	1864	
	Attar Singh, ..	1882	
5	Bahadur Ram, ..	1867	
	Beavers, W., Private, 104th Regiment,	1866	
	Behari Lal Majumdar,	1867	
	Bani Prasad Upadhyaya,	1891	
	Bani Prasad,	1868	
10	Benford, C., Corpl, .. Royal Engineers,	1882	
	Bhagat Ram, ..	1882	
	Blair, W., Corporal, .. Royal Engineers,	1882	
	Boyd, T., Private, .. 7th Hussars,	1865	
	Brien, Corporal, .. Madras S. and Miners,	1860	
15	Burke, E., Private, 37th Regiment,	1860	
	Burke, H., 2nd Corpl, Sappers and Miners,	1864	
	Bholo Ram, .. Storekeeper, Mily Works,	1878	
	Jargill, W., Sapper, .. Royal Engineers,	1870	
	Chandra Kumar Ghosh,	1878	
20	Chatur Lal, ..	1878	
	Cloutman, H., Sergt., Royal Engineers,	1883	
	Coulthrop, T., Private, 14th Dragoons,	1869	
	DaBergu, W. F., Sergt., Royal Engineers,	1877	
24	Donahy, F., Lieut.-Corpl, 37th Regiment,	1870	

* Special Class.

ALPHABETICAL LIST OF CANDIDATES PASSED BY DIRECT EXAMINATION. 101

No.	Rank and Name, &c.	Year.	Remarks.
OVERSEERS—(continued)			
25	Denehaw Hormuzahaw,	.. 1870	
	Din Dyal,	.. 1876	
	Downes, J., Sapper,	.. 1866	
	Edwards, J., Corporal,	.. 1866	21st Hussars,
	Farane, J., Sergt.,	.. 1868	Royal Artillery,
30	Farren, W., Sapper,	.. 1868	Royal Engineers,
	FineGibbon, H. W.,	.. 1864	
	Fox, O.,	.. 1860	Benares,
	Fraser, S., Private,	.. 1866	42nd Highlanders,
	Ganga Prasad,	.. 1872	Gurgaon,
35	Gates, T.,	.. 1861	Artificer,
	Ghulam Shabbir,	.. 1867	Sub-Overseer,
	Gobind Lal,	.. 1871	
	Gray, T., Private,	.. 1866	19th Hussars,
	Harris, T.,	.. 1866	Ordnance Artificer,
40	Hughes, T., Private,	.. 1865	42nd Highlanders,
	Hari Chand,	.. 1868	
	Jadgath Chowdry,	.. 1860	Benares,
	Johnstone, A.,	.. 1860	Gravator,
	Jolly, W., Private,	.. 1870	1-6th Regiment,
45	Kapur Singh,	.. 1865	Sub-Overseer,
	Kam Ah,	.. 1860	Gonda,
	Kelly, P.,	.. 1864	Royal Artillery,
	Kishan Chand,	.. 1865	
	Kuri Mál,	.. 1873	Native Drawing Master,
50	Krishnaji Ganesh,	.. 1862	Nagpur,
	Lechman Prasad,	.. 1861	Benares,
	Larkin, M., Sapper,	.. 1870	Royal Engineers,
	Lloyd, C.,	.. 1861	Secundrabad,
	Lyness, B.,	.. 1861	Sitapur,
55	Mahoney, J., Corporal,	.. 1859	Royal Engineers,
	Manton, J., Private,	.. 1860	
	Mason, W. B.,	.. 1860	Ordnance Artificer,
	Mathurá Das,	.. 1869	
	McGregor, D.,	.. 1848	
60	McGraw, P. B., Major,	.. 1860	1st M. N. Infantry,
	McLaughlin, G.,	.. 1870	Lucknow,
	McLean, Sergeant,	.. 1866	42nd Highlanders,
	Mohitachandra Ray,	.. 1869	
	Moran, F., Private,	.. 1866	
65	Mudge, H., Qr-Mr Sgt,	.. 1877	Royal Engineers,
	Murphy, W., Sapper,	.. 1868	Royal Engineers,
	Nabi Ahmad,	.. 1870	
	O'Donnell, J. H., Sergt.,	.. 1868	Barrack Sergeant,
	Power, J.,	.. 1861	Secundrabad,
70	Reid, Alfred Augustus,	.. 1874	
	Reilly, J. B.,	.. 1865	
	Ritchie, W., Corporal,	.. 1868	Sappers and Miners,
	Rivett, J. H.,	.. 1861	Sitapur,
	Robertson, J. E.,	.. 1865	Kamptee,
75	Rose, F.,	.. 1859	Caravan Ord Artificer,
76	Sapórij Sorahji,	.. 1878	Sub-Overseer,

102 ALPHABETICAL LIST OF CANDIDATES PASSED BY DIRECT EXAMINATION.

No.	Rank and Names, &c.	Year	Remarks
OVERSEER—(continued).			
77	Saratchandra Ray, .	.. 1871	
	Sarkar, ..	1890	
	Sharma, C. P., ..	Meerut, 1859	
80	Shambhu Das, ..	Native Surveying Master, 1872	
	Shao Narayan, ..	Native Surveying Master, 1871	
	Soobrow, H. V., ..	1869	
	Sri Ram, ..	Sub-Overseer, 1st grade, 1874	
	Steele, G., Corporal, ..	Royal Engineers, 1859	
85	Summers, H., ..	1873	
	Umrzo Singh, ..	Bangor, 1880	
	Uttam Singh, ..	1884	
	Vardon, S. H., ..	Ranchore Division, 1859	
	Vyner, H., ..	11th Hussars, 1873	
90	Wesdon, C., Gunner, ..	C. G. R. H. Artillery, 1866	
	Wilson, W. T., L.-Corpl., ..	9th Lancers, 1882	
	Wiseman, R., Private, ..	2nd Bn. R. Brigade, 1860	
93	Yank, T., ..	Artificer, 1861	

OFFICERS' SURVEYING CLASS.

1866

No.	Names.	Rank and Corps.	Marks obtained.	Remarks.
<i>(Full Marks, 900).</i>				
1	Stillwell, T. F.	.. Lieut., 36th Regiment.	750	} <i>Higher Standard Military Surveying and Field Engineering.</i> } <i>Passed in Military Surveying and Field Engineering.</i> } <i>Will be qualified on completing his Military Surveying.</i>
2	Gordon, R.	.. Lieut., 86th Highlanders.	864	
3	Macpherson, J. D.	.. Lieut., 8rd Punjab Cavalry.	882	
4	Campbell, H.	.. Captain, Bengal Staff Corps.	823	
5	Richmond, F.	.. Lieut., Royal Artillery.	819	

1867

<i>(Full Marks, 900)</i>				
1	Hanna, H. B.	.. Lieut., 10th Bengal Cavalry.	681	} <i>Higher Standard Military Surveying and Field Engineering.</i> } <i>Passed in Military Surveying and Field Engineering.</i>
2	Elliston, E. C.	.. Esqun, 58th Regiment.	584	
3	Dale, G. H.	.. Esqun, 105th Regiment.	519	
4	Lozack, C. W.	.. Captain, 83rd Highlanders.	517	

1868

<i>(Full Marks, 900)</i>				
1	Beavan, R.	.. Lieut., 22nd P. N. Infantry.	748	} <i>Higher Standard Military Surveying and Field Engineering.</i> } <i>Passed in Military Surveying and Field Engineering.</i>
2	O'Callaghan, J. W.	.. Esqun, 1st Bn 11th Regt.	705	
3	Rogers, E.	.. Capt., 18th Native Infantry.	658	
4	Story, W.	.. Lieut., 2nd Sikhs.	619	
5	Holmes, W. P.	.. Lieut., 1st Bn 7th Regt.	489	
6	Trotter, J. F.	.. Lieut., 1st Bn 11th Regt.	455	} <i>Passed in Military Surveying and Field Engineering.</i>
7	Leslie, F.	.. Lieut., 105th Regiment.	454	

1869.

<i>(Full Marks, 900).</i>				
1	Collett, H.	.. Capt., 21st P. N. Infantry.	798	} <i>Higher Standard Military Surveying and Field Engineering.</i>
2	Millingworth, A. E.	.. Capt., 85th Light Infantry.	776	
3	Buller, H.	.. Capt., 11th B. Cavalry.	750	
4	Gouldsbury, D. E.	.. Lieut., 105th Regiment.	624	
5	Harden, A.	.. Lieut., 22nd P. N. Infantry.	487	} <i>Passed in Military Surveying and Field Engineering.</i>
6	Owan, G. A.	.. Captain, 107th Regiment.	418	
7	Barrow, C. E.	.. Lieut., 5th Royal I. Lancers.	404	
8	Gray, H.	.. Esqun, 3rd Buffs.	394	} <i>Passed in Field Engineering.</i>

1870.

No.	Name.	Rank and Corps.	Actual Grade.	Remarks.
(Full Marks, 900).				
1	Woodhouse, H.,	.. Captain, 23rd Pioneer,	617	Higher Standard. Military Sur- veying and Field Engineering.
2	Allen, H.,	.. Lieut., 107th Regiment,	578	
3	Jamieson, A W.,	.. Lieut., 108th Regiment,	558	Passed in Military Surveying and Field Engineering.
4	Moore, G R.,	.. Lieut., 107th Regiment,	555	
5	Sweetnam, H.,	.. Ensign, 36th Regiment,	551	Passed in Field Engineering.
6	Richols, T.,	.. Lieut., 32nd F N Infantry,	564	

1871.

(Full Marks, 1000).				
1	Branson, C E D.,	.. Capt., Genl List, Infantry,	912	Higher Standard. Military Sur- veying and Field Engineering.
2	Burrell, E.,	.. Ensign, 35th Regiment,	797	
3	Thompson, R.,	.. Lieut., 1-11th Regiment,	772	Passed in Military Surveying and Field Engineering.
4	Trotter, J M.,	.. Capt., Genl List, Infantry,	738	
5	Harcourt, F H.,	.. Captain, Royal Artillery,	700	Passed in Military Surveying and Field Engineering.
6	Stewart, J M.,	.. Captain, Bengal Army,	680	
7	Bathborne, H. R.,	.. Lieut., 2-25th Regiment,	619	Passed in Military Surveying and Field Engineering.
8	Carter, H T.,	.. Ensign, 62nd Regiment,	585	
9	Brown, W. H.,	.. Lieut., Bengal Staff Corps,	418	

1872.

(Full Marks, 1000).				
1	Bell, E.,	.. Lieut., 1-6th Regiment,	898	Higher Standard. Military Sur- veying and Field Engineering.
2	Farrington, C H.,	.. Captain, 18th B Cavalry	768	
3	Hickson, R. A.,	.. Lieut., The Buffs,	698	Passed in Military Surveying and Field Engineering.
4	Dodsworth, W F.,	.. Captain, 26th F Infantry,	692	
5	Byng, G P F.,	.. Lieut., 108th Regiment,	674	
6	Scott, C H. F.,	.. Brevet Major, B S. Corps,	534	

1873.

(Full Marks, 1000)				
1	Dowse, R.,	.. Lieut., 2-12th Regiment,	780	Higher Standard. Military Sur- veying and Field Engineering.
2	Kane, M N G.,	.. Lieut., 72nd Regiment,	782	
3	Corbett, W A.,	.. Captain, 62nd Regiment,	684	Passed in Military Surveying and Field Engineering.
4	Bellous, G M.,	.. Lieut., 107th Regiment,	677	
5	Thomas, C F.,	.. Capt., Genl List, Infantry,	568	
6	Agan, C.,	.. Lieut., 12th B Cavalry,	508	

1874.

No.	Name.	Rank and Corps	Test Mark	Remarks.
<i>(Full Marks, 1000)</i>				
1	Stewart, G.	...Capt, Bengal Staff Corps,	818	} <i>Higher Standard Military Sur-</i> <i>veying and Field Engineering.</i> } Passed in Military Surveying and Field Engineering.
2	Bowhill, J. H.	...Lieut, 62nd Regiment, ..	796	
3	Babington, C. W.	...Capt, Genl. List, Infantry,	631	
4	MacDonald, L.	...Capt, Bengal Staff Corps,	587	

— 101 —

1875.

<i>(Full Marks, 1000)</i>				
1	Hammond, A. G.	...Capt, Guides Corps, ...	850	} <i>Higher Standard Military Sur-</i> <i>veying and Field Engineering</i>
2	Main, J. E.	...Lieut, 5th P. N. Infantry,	728	

— 6 —

1876.

<i>(Full Marks, 1000)</i>				
1	Young, G. F.	...Lieut, 30th N. Infantry, ..	911	} <i>Higher Standard Military Sur-</i> <i>veying and Field Engineering</i> } Passed in Military Surveying and Field Engineering
2	Fordyce, J. D.	...Lieut, 5th Bengal Cavalry,	888	
3	Wilcox, E. R. C.	...Major, Staff Corps, ...	548	

FRASER LIST.

BRITISH MILITARY SURVEY CLASS.

1888.

Standing in Surveys	Names.	Rank and Corps.	Mark achieved	Remarks.
(Full Marks, 600).				
1	Zero, A.,	.. Loc.-Corpl, 1st Dragoon Guards,	496	
2	Bearpark, N.,	... Loc.-Corpl, 2nd Dragoon Guards,	498	
3	Festfield, E.,	Loc.-Corpl, 1st K. O S Border- ers,	455	
4	Jeffries, W.,	... Loc.-Cpl, 17th D C O Lancs,	449	
5	Cordery, E.,	.. Corpl, 7th Dragoon Guards, ..	360	
6	Bristol, W.,	... Sergt, 7th Dragoon Guards, ...	...	Deserted

1889

(Full Marks, 600)			
1	Batten, F.,	(Sergt., 2nd Wiltshire Regiment,	470
2	Walsh, T.,	.. Sergt., 2nd Scottish Rifles, .	432
3	Hampton, R.,	Loc-Sergt., 8th Hussars, ...	460
4	Smulaur, R.,	... Loc. Corpl, 2nd Seaforth High- landers,	396
5	Minto, H.,	.. Sergt., 2nd Manchester Regt., .	354
6	Sharpe, W.,	.. Loc-Sergt., 2nd Warwickshire Regiment,	342
7	Martin, W.,	... Pte, 2nd Devonshire Regiment,	341
8	Bolton, R.,	.. Sergt., 2nd West Yorkshire Re- giment,	331

1890.

(Full Marks, 600).			
1	Stevenson, M.,	.. Loc.-Corpl, 1st Rifle Brigade, ..	398
2	O'Rourke, M.,	.. Sergt., 2nd Royal Irish Fusiliers,	392
3	Coak, G.,	.. Sergt., 2nd South Wales Bor- ders,	327
4	Ingladew, G. H.,	.. Loc.-Corpl, 3rd Dragoon Guards,	305
5	McKenzie, W.,	... Sergt., 2nd Highland Light In- fantry,	303
6	Lore, P.,	.. Loc.-Corpl., 2nd Northumber- land Fusiliers, ...	233

Higher Standard.

1891.

Rank and Name	Name.	Rank and Corps.	Marks gained.	Remarks.
(Full Marks, 600).				
1	Blackborrow, W.,	.. Lieut.-Col., 1st Bn. East Kent,	402	} Higher Standard,
2	Webb, G. C.,	.. Corpl., 2nd Bn Royal Scots	367	
		Fusiliers,	343	
3	Henson, S.,	.. Sergt., 2nd Royal Sussex,	338	
4	Catt, C. H.,	.. Sergt., 1st Bn East Lancashire,	283	
5	Pratt, W.,	.. Corpl., 1st Bn. Royal Welsh	283	} Failed.
		Fusiliers,	182	
6	Kennedy, F. W.,	.. Sergt., 2nd Bn. Border Regt.,		

1892.

(Full Marks, 600)				
1	Morgan, E.,	.. Sergt., 3rd Bn Rifle Brigade, ..	448	} Higher Standard.
2	Hale, J. W.,	.. Sergt., No. 6 Mountain Bty,	376	
		R. A.,	354	
3	Brown, A.,	.. Lieut.-Sergt., 2nd Bn. Lincolnshire	350	
		Regt.,	338	
4	McDonough, A. D.,	.. Lieut.-Corpl., 1st Bn Royal Welsh	338	
		Fusiliers,	325	
5	Cowling, A.,	.. Sergt., 2nd Bn. West Yorkshire	325	
		Regt.,	311	
6	Edwards, H. S.,	.. Lieut.-Corpl., 5th B I Lancers,		
7	Adrian, J.,	.. Sergt., 2nd Bn. Border Regt.,		
		ment,		
8	Barrett, J.,	.. Sergt., 1st Bn. Royal Fusiliers,		

1893.

(Full Marks, 600).				
1	McKeown, T.,	.. Sergt., 2nd Bn Argyll and	474	} Higher Standard.
		Sutherland Highlanders, ..	458	
2	Thornburn, J.,	.. Lieut.-Sergt., 1st Bn Gordon	440	
		Highlanders,	375	
3	Cunningham, C.,	.. Sergt., 1st Bn East Surrey Regt.,	366	
4	O'Connell, C.,	.. Lieut.-Corpl., 1st Bn. Rifle Bri-		
		gade,		
5	Allen, G.,	.. Sergt., 1st Bn. Royal West Kent		
		Regt.,		
6	Yorke, E. J.,	.. Corpl., 2nd Bn. Royal Munster	582	
		Fusiliers,		
7	Pimlott, J. E.,	.. Lieut.-Corpl., 2nd Bn Manchester	253	Failed.
		Regt.,		

YEARLY LIST.

1894.

Standing in Examination	Name.	Rank and Corps.	Marks gained.	Remark.
(Full Marks, 600).				
1	Craig, W. M.,	.. Lee-Corpl, 16th (Queen's) Lan- cers,	480	} Higher Standard.
2	Pantry, F.,	.. Sergt, 1st Bn Hampshire Regt.,	417	
3	Bentall, A. M.,	.. Lee-Sergt, 2nd Bn Essex Regt.,	413	
4	Kensdale, R. J.,	.. Sergt, 1st Bn King's Royal Rifles,	408	
5	Marr, J. T.,	.. Lee-Sergt, 1st Bn Devonshire Regt.,	378	
6	Pimlott, J. B.,	.. Lee-Corpl, 2nd Bn Manchester Regt.,	375	
7	Harris, F.,	.. Sergt, 5th B I Lancs.,	371	
8	Mearns, W. J.,	.. Sergt, 2nd Bn Oxfordshire L.I.,	..	Withdrawn.

1895

(Full Marks, 600).				
1	Hannay, R. S.,	.. Sergt, 2nd Bn. Royal Dublin Fusiliers,	455	} Higher Standard.
2	Cameron, H.,	.. Sergt, 1st Bn. Gordon High- landers,	440	
3	Flower, J. H.,	.. Lee-Corpl, 1st Bn. King's Royal Rifles,	388	
4	Bradshaw, W. P.,	.. Lee-Corpl, 1st Bn. K. O. S Borderers,	336	
5	Lee, H.,	.. Sergt, 1st Bn. Duke of Corn- wall's L. I.,	..	} Withdrawn.
6	Shepherd, W.,	.. Corpl, 1st Bn. East Surrey,	..	
7	Reynolds, J. N.,	.. Lee-Sergt, 2nd Bn Derbyshire,	..	} Dead.
8	Swete, H.,	.. Corpl, 2nd Bn. Highland L. I.,	..	

1896.

(Full Marks, 300).				
1	Smith, A.,	.. Corpl, 1st Bn Hampshire Regt.,	255	} Higher Standard.
2	Bennett, E.,	.. Corpl, 1st Bn Shropshire L. I.,	251	
3	Sheppard, J. P.,	.. Sergt, 3rd Bn Rifle Brigade,	240	
4	Jones, E. W.,	.. Lee-Corpl, 1st Bn Somerset Light Infantry,	208	
5	Mann, A. S.,	.. Sergt, 1st Bn Gordon High- landers,	202	
6	Ball, S. R.,	.. Asig. Bomb, 13th Co. South- ern Dn, R.A.,	191	
7	Cattell, H.,	.. Lee-Corpl, 2nd Bn Highland Light Infantry,	180	
8	Horton, J. G.,	.. Sergt, 2nd Bn. Border Regt.,	181	

NATIVE MILITARY SURVEY CLASS.

(Called the Guides Corps Class on first foundation in 1878 and until 1880).

1874.

Rank and Corps.	Name.	Rank and Corps.	Points	Remarks.
(Full Marks, 2400).				
3	Mahmud Khan,	.. Remandar, Guides Corps, ..	785	
18	All Anghar,	.. Duffadar, "	885	
0	Badda Rang,	.. Duffadar, "	878	
1	Khan Baba,	.. Duffadar, "	2200	Higher Standard.
19	Nadar Ali,	.. Sowar, "	880	
18	Karpal Singh,	.. Sowar, "	835	
8	Radha Kathan,	.. Sowar, "	890	
11	Imar Singh,	.. Sowar, "	555	
10	Atta Muhammad,	.. Sowar, "	565	
12	Kadar Khan,	.. Sowar, "	580	
9	Nihal Chand,	.. Sowar, "	590	
4	Jewalla Singh,	.. Havildar, "	700	
8	Kamr-ud-din,	.. Havildar, "	845	
14	Dharm Singh,	.. Havildar, "	845	
14	Sher Singh,	.. Nauck, "	405	
8	Jiwan Singh,	.. Nauck, "	455	
21	Mydallah,	.. Lance-Nauck, "	280	
22	Adam Khan,	.. Lance-Nauck, "	265	
23	Arin Khan,	.. Sepoy, "	280	
15	Tumar Shah,	.. Sepoy, "	400	
17	Napa (3),	.. Sepoy, "	340	
28	Bir Behadér,	.. Sepoy, "	260	
22	Amar Singh,	.. Sepoy, "	285	
7	Kamar Singh (4),	.. Sepoy, "	675	
20	Maidan,	.. Sepoy, "	820	

1875.

(Full Marks, 2100).				
4	Ghanita,	.. Snbader, Guides Corps, ..	1215	Higher Standard.
1	Shahzad Jahangir,	.. Duffadar, "	1860	
12	Fakrullah,	.. Duffadar, "	869	
6	Mohar Singh,	.. Sowar, "	1089	
25	Ghulam Haider,	.. Sowar, "	482	
17	Hidayatullah,	.. Sowar, "	590	
8	Faris Ram,	.. Sowar, "	960	
11	Muhammed Latif,	.. Sowar, "	840	
8	Fais Talla,	.. Sowar, "	1280	Higher Standard.
10	Miah Singh,	.. Sowar, "	917	
18	Aslam,	.. Sowar, "	778	

YEARLY LIST

1876.

Ranking at Commencement	Name.	Rank and Corps.	Marks gained	Remarks.
7	Samundār,	.. Havildar, Guides Corps,	1008	
20	Khem Singh,	.. Lance-Naiak,	570	
11	Dillia,	.. Lance-Naiak,	587	
9	Kaleer,	.. Lance-Naiak,	966	
14	Ran Bahadur,	.. Sepoy,	708	
18	Khin Mir,	.. Sepoy,	685	
3	Shahat Singh,	.. Sepoy,	1365	<i>Higher Standard.</i>
20	Kallander,	.. Sepoy,	570	
18	Bar Bull,	.. Sepoy,	577	
22	Jitman,	.. Sepoy,	558	
19	Martana,	.. Sepoy,	572	
8	Bala Singh,	.. Sepoy,	1100	<i>Higher Standard.</i>

1876.

(Full Marks, 2200).

4	Jagat Singh,	.. Jemadar, Guides Corps,	1262	<i>Higher Standard.</i>
8	Mehtab Singh,	.. Havildar-Major,	1697	
18	Bhup Singh,	.. Duffader,	841	
1	Ram Dayal,	.. Trumpeter,	1674	<i>Higher Standard.</i>
18	Wazir Singh,	.. Sowar,	729	
12	Anfir Khan,	.. Sowar,	937	
17	Ghulam Rasool,	.. Sowar,	737	
2	Shahzadi Taiman,	.. Sowar,	1689	<i>Higher Standard.</i>
13	Kala Singh,	.. Sowar,	959	
19	Jog Dhyaa,	.. Sowar,	895	
11	Abdul Hamid,	.. Sowar,	1053	
9	Nahalla,	.. Sepoy,	1062	
5	Rannuh,	.. Lance-Naiak,	1138	<i>Higher Standard.</i>
8	Abdalah,	.. Bugler,	1098	
10	Guruch Shah,	.. Lance-Naiak,	1072	
14	Ilahi Bakhsa,	.. Sepoy,	908	
22	Nasim,	.. Sepoy,	512	
23	Mirab,	.. Sepoy,	506	
20	Ilakhan Singh,	.. Sepoy,	690	
8	Ganda Singh,	.. Sepoy,	1449	<i>Higher Standard.</i>
6	Kala Singh,	.. Sepoy,	1098	
16	Jang Bir Thapa,	.. Sepoy,	815	
21	Dada Khan,	.. Sepoy,	629	

1877.

(Full Marks, 2200)

5	Jwala Singh,	.. Jemadar, Guides Corps,	1361	<i>Higher Standard.</i>
10	Tahal Singh,	.. Havildar,	1178	
6	Mohar Singh,	.. Duffader,	1848	
11	Bahadur Singh,	.. Naiak,	1148	
21	Jangi,	.. Lance-Naiak,	738	

1877.

Ranking in Previous Year	Name.	Rank and Corps.	Points Gained	Remarks.
2	Ishar Singh,	Sowar, Guides Corps,	1468	} Higher Standard.
3	Nihal Chand,	" Sowar, "	1179	
18	Isayut Khan,	" Sowar, "	985	
15	Muhammad Ali,	" Sowar, "	845	
20	Zabta Khan,	" Sowar, "	805	} Higher Standard.
1	Abdul Ahsad,	" Sowar, "	1655	
6	Hakumat Rai,	" Sowar, "	1224	
17	Devri Singh,	" Sepoy, "	901	
19	Ran Bir,	" Sepoy, "	821	} Higher Standard.
7	Ran Bahadar,	" Sepoy, "	1281	
24	Chhabila,	" Sepoy, "	689	
22	Kashu,	" Sepoy, "	766	
16	Ganda Singh,	" Sepoy, "	949	} Higher Standard.
2	Sachet Singh,	" Sepoy, "	1531	
14	Aryan Singh,	" Sepoy, "	1089	
13	Taras,	" Sepoy, "	1091	
4	Bela Singh,	" Sepoy, "	1438	} Higher Standard.
12	Danlat,	" Sepoy, "	1104	
23	Fateh Khan,	" Sepoy, "	763	

1878.

(Full Marks, 2200)

10	Muhammad Sharif,	Jemadar, Guides Corps,	1102	} Higher Standard.
5	Tirath Ram,	" Duffadar, "	1401	
19	Kapoor Singh,	" Havildar, "	782	
24	Mohan Bir,	" Havildar, "	808	
1	Ganesh Shah,*	" Naick, "	1692	} Higher Standard.
21	Chagat Singh,	" Sowar, "	727	
6	Des Rai,	" Sowar, "	1832	
12	Bulhan Singh,	" Sowar, "	1000	
25	Yahya Khan,	" Sowar, "	873	} Higher Standard.
11	Muhammad Hassan,	" Sowar, "	1080	
8	Abdul Hamid,*	" Sowar, "	1574	
3	Muhammad Husam,	" Sowar, "	1341	
23	Muhammad Sarwar,	" Sowar, "	724	} Higher Standard.
20	Kalandar,	" Lance-Naick, "	743	
19	Hira Singh,	" Sepoy, "	775	
17	Mani Rai,	" Sepoy, "	827	
9	Gordat Singh,	" Sepoy, "	1162	} Higher Standard.
2	Nihala,*	" Sepoy, "	1622	
14	Dada Khan,*	" Sepoy, "	928	
18	Kalandar,*	" Sepoy, "	888	
15	Rahim Didi,	" Sepoy, "	946	} Higher Standard.
22	Abdul Karim,	" Sepoy, "	889	
4	Thakur Singh,	" Sepoy, "	1531	
16	Fakir Muhammad,	" Sepoy, "	838	
7	Ganda Singh,	" Sepoy, "	1349	} Higher Standard.

* Have attended a course previously.

YEARLY LIST.

1880.

Sl. No.	Name.	Rank and Corps	Marks gained.	Remarks.
(Full Marks, 900)				
1	Shobha Rām,	Naick, 4th P Infantry,	805	Higher Standard.
2	Faiz Shah,	Sowar, 8th B Cavalry,	803	
3	Sunder Singh,	Sepoy, 1st Sikh Infantry,	783	
4	Shib Singh,	Sowar, 9th B Cavalry,	770	
5	Abdāl Sāmād,	Duffadar, 6th P Cavalry,	768	
6	Bodh Rāj,	Sowar, 12th B Cavalry,	712	
7	Pānah Khān,	Sowar, 11th B Lancers,	616	
8	Shams-ud-din Khān,	Lance-Duffadar, 13th B L.,	465	Higher Standard.
9	Bhagwan Singh,	Sowar, 11th B Lancers,	469	
10	Abdāl Latif Khān,	Duffadar, 4th P Cavalry,	379	
	Hazārāh Singh,*	Lance-Duffadar, 3rd P C.,	..	Higher Standard.

1881.

(Full Marks, 900)				
1	Kartār Singh,	Sowar, 16th B Cavalry,	798	Higher Standard.
2	Harnām Singh,	Sowar, 7th B Cavalry,	787	
3	Sardār Khan,	Duffadar, 4th P Cavalry,	787	
4	Kalandar Khān,	Sowar, 7th B Cavalry,	730	
5	Bishan Singh,	Sowar, 8th P Cavalry,	725	
6	Rustam Singh,	Sowar, 8th B Cavalry,	710	
7	Dewa Singh,	Lance-Duffadar, 4th P C.,	697	
8	Hakhtawar Singh,	Sowar, 16th B Cavalry,	660	
9	Wiro Khān,	Sowar, 2nd B Cavalry,	648	
10	Santa Singh,	Havildar, 4th Sikh Infantry,	648	
11	Sher Singh,	Sowar, 6th B Cavalry,	637	
12	Kurban Ali,	Sowar, 8th P Cavalry,	617	
13	Hanūmant,	Havildar, 6th P Infantry,	602	
14	Kirpa Shankar,	Sowar, 16th B Cavalry,	601	
15	Bela Singh,	Lance-Naick, 1st Sikh Infy,	592	
16	Atta Muhammad,	Sepoy, 2nd P Infantry,	567	
17	Daya Singh,	Sowar, 7th B Cavalry,	542	
18	Sheikh Aulad Ali,	Sowar, 2nd B Cavalry,	527	
19	Ghulam Hadrat Khān,	Sowar, 2nd B Cavalry,	523	
20	Vateh Singh,	Sowar, 4th P Cavalry,	458	
21	Gunda Singh,	Sowar, 3rd P Cavalry,	447	
22	Bela Singh,	Sepoy, Guides Corps,	438	
23	Inayatulla Khān,	Sowar, 6th B Cavalry,	409	
24	Shāh Mast,	Havildar, 3rd P Infantry,	308	

1882.

(Full Marks, 900).				
1	Lakha Singh,	Havildar, 4th B Infantry, ..	749	} Higher Standard.
2	Kulhan Singh,	Sowar, 4th P Cavalry, ..	737	
3	Mubammad Akbar Khan.	Duffadar, 15th B Cavalry, ..	676	

* Reported before completion of class—higher certificate granted, as he well deserved it.

1882.

Ranking in Recruitment.	Name	Rank and Corps	Marks gained.	Remarks
4	Bahbôd Khân,	.. Sowar, 15th B Cavalry, ..	874	<i>Higher Standard.</i>
5	Harsâm Singh,	.. Lance Naick, 6th P Infy,	852	
6	Râm Sahay Singh,	.. Sowar, 6th B Cavalry, ..	847	
7	Muhammad Miwan Khân,	.. Duffadar, 16th B. Cavalry,	846	
8	Salag Singh,	.. Sowar, 6th B Cavalry, ..	839	
9	Bahadûr Ali,	.. Sepoy, 1st Sikh Infantry,	827	
10	Abdûl Rahman Khân,	.. Sowar, 1st P Cavalry, ..	822	
11	Bakhan Singh,	.. Havildar, 44th N. Infantry,	599	
12	Gopal Singh,	.. Havildar, 44th N. Infantry,	582	<i>Higher Standard.</i>
13	Chhabial Jand,	.. Havildar, 44th N. Infantry,	575	
14	Kalyân Singh,	.. Sowar, 6th B Cavalry, ..	560	
15	Nyabat Ali,	.. Naick, 3rd Punjab Infantry,	559	
16	Basant Singh,	.. Lance-Naick, 4th Sikh Infy,	549	
17	Rasû Ali,	.. Sowar, 6th B Cavalry, ..	545	
18	Narsingh Singh,	.. Havildar, 2nd P Infantry,	531	
19	Miran Dakhsh,	.. Sowar, 16th B Cavalry, ..	520	<i>Higher Standard.</i>
20	Abdûl Saud Khân,	.. Sowar, 4th P Cavalry, ..	607	
21	Makkhan Mishra,	.. Lance-Naick, 6th B L I, ..	497	
22	Miyân Singh,	.. Naick, 1st Punjab Infantry,	598	
23	Humâ Chand,	.. Subadar, 44th N Infantry,	890	
24	Shahab Beg,	.. Lee-Naick, 2nd Sikh Infy,	882	

1883.

(Full Marks, 900).

1	Kanak Singh,	.. Naick, 5th Goorkha Regt., ..	898	<i>Higher Standard.</i>
2	Shivbarn Singh,	.. Jemadar, 2nd B. L. Infy, ..	804	
3	Mathab Singh,	.. Naick, 1st Sikh Infantry, ..	771	
4	Udam Singh,	.. Sowar, 9th Bengal Cavalry,	748	
5	Taj Muhammad,	.. Naick, 6th Punjab Infantry,	723	
6	Lakh Râm,	.. Jemadar, 6th B L. Infy, ..	716	
7	Jawab Râm,	.. Lance-Naick, 6th B L I, ..	688	
8	Roder Singh,	.. Sowar, 9th Bengal Cavalry,	648	
9	Lachman Singh,	.. Lance-Duffadar, 3rd P C,	639	
10	Rajwâl Khân,	.. Jemadar, 2nd Punjab Infy,	619	
11	Lakh Râm,	.. Naick, 6th Bengal L. Infy,	589	
12	Abdûl Rahman Khân,	.. Duffadar, 9th Bengal Cav,	526	
13	Ali Khân,	.. Naick, 2nd Bengal L. Infy,	457	

1884.

(Full Marks, 900)

1	Juwâl Singh,	.. Sowar, Guides Corps, ..	887	<i>Higher Standard.</i>
2	Nawab Khân,	.. Sepoy, 4th P Infantry, ..	806	
3	Abmadyar Khân,	.. Jemadar, 10th B Cavalry,	761	
4	Jalâl Khân,	.. Duffadar, 11th B Cavalry,	752	
4	Lâl Singh,	.. Sowar, 15th Bengal Lancers	752	

YEARLY LIST.

1884.

Ranking in Examination.	Names.	Rank and Corps.	Marks gained.	Remarks.
6	Bhāp Singh,	.. Duffadar, 1st P Cavalry,...	710	<i>Higher Standard.</i>
6	Bhagwan Singh,	.. Sowar, 2nd Punjab Cavalry,	710	
8	Chanta Singh,	.. Jemadar, 18th B N Infy,	688	
9	Rāmāin,	.. Sepoy, 28th B N Infantry,	684	
10	Bhāp Singh,	.. Sepoy, 39th B N Infantry,	661	
11	Tikam Singh,	.. Sepoy, 18th B N Infantry,	619	
12	Badhawa Singh,	.. Sepoy, 1st Punjab Infantry,	581	
13	Wali Ulla,	.. Havildar, 1st Sikh Infantry,	498	
14	Khan Wali,	.. Jemadar, 3rd Sikh Infantry,	418	

1885

(Full Marks, 900)

1	Abdul Jabbar,	.. Sowar, 11th B Lancers, .	799	<i>Higher Standard</i>
2	Har Narayan Pathak,	Havildar, 3rd B N Infy, .	792	
3	Narayan Singh,	.. Sowar, 5th B Cavalry, ..	785	
4	Dwarka Shukul,	.. Naick, 3rd B N Infantry,	773	
5	Gopal Singh,	.. Sowar, 1st P Cavalry, ..	772	
6	Jahangir,	.. Sowar, Guides Corps, ..	745	
7	Jagan Nath,	.. Sowar, 5th P Cavalry, ..	738	
8	Hazrat Shah,	.. Jemadar, 5th P Infantry,	730	
9	Aunadi Prasad,	.. Sowar, 2nd C I Horse, ..	727	
10	Munna Khan,	.. Jemadar, 18th B N Infy,	676	
11	Lachhman Singh,	.. Havildar, 2nd P Infantry,	668	
12	Kapur Singh,	.. Sepoy, 4th Sikh Infantry,	577	
13	Nihal Singh,	.. Sepoy, 2nd Sikh Infantry,	533	
14	Parsa Singh,	.. Sowar, 1st C. I. Horse, ..	531	
15	Sawal Singh,	.. Sowar, 11th B Lancers, ..	429	

1886.

(Full Marks, 900)

1	Rahmāwā Khān,	.. Duffadar, 15th B Cavalry,	851	<i>Higher Standard.</i>
2	Jiwand Singh,	.. Jemadar, 18th B Lancers,	824	
3	Ghulam Muhammad,	.. Sepoy, 3rd Sikh Infantry, .	804	
4	Khasan Singh,	.. Sepoy, 1st Sikh Infantry, ..	803	
5	Muhammad Khān,	.. Sowar, Guides Corps, ..	784	
6	Faizalab,	.. Havildar, 6th P Infantry,	748	
7	Shah Ali Khān,	.. Lance-Duffadar, G Corps,	727	
8	Hukam Chand,	.. Lance-Duffadar, B L., ..	709	
9	Jagat Singh,	.. Sepoy, 19th P Infantry, ..	694	
10	Fateh Muhammad,	.. Sepoy, 4th B N Infantry,	644	
11	Mutsaddi Singh,	.. Naick, 4th B N Infantry,	615	
12	Jhandā Singh,	.. Havildar, 1st P Infantry,	574	
13	Jaman Singh Kāi,	.. Subadar, 48rd A. L. Infy,	567	
14	Rajbir Nowār,	.. Jemadar, 48rd A. L. Infy,	503	
15	Arjāsh Khān,	.. Duffadar, 2nd P Cavalry,	487	

1897.

Sl. No.	Names.	Rank and Corps.	Marks obtained.	Remarks.
(Full Marks, 900).				
1	Sultan Garkhro,	.. Sowar, 8rd Punjab Cavalry,	844	Higher Standard
2	Paran Singh,	.. Sowar, 12th Bengal Cavalry,	807	
3	Mian Singh,	.. Havildar, 16th Sikhs,	775	
4	Dhanspal Singh,	.. Lance-Naick, 40th B. Infy.,	761	
5	Hayatulla,	.. Naick, 4th Sikhs,	744	
6	Bahiddat Khan,	.. Sowar, 1st Punjab Cavalry,	733	
7	Gurdas Singh,	.. Duffadar, 6th B. Cavalry,	723	
8	Kalwar Singh,	.. Sepoy, 5th Gurkhas,	712	
9	Mahammad Amin Khan,	.. Kote Duffadar, 15th Bengal Cavalry,	708	
10	Badrulai Ram,	.. Havildar, 44th G. L. Infy.,	708	
11	Larinda,	.. Sepoy, 4th Punjab Infantry,	650	
12	Muhammed Hussain,	.. Duffadar, 8th B. Cavalry,	646	
13	Jalal Din,	.. Sepoy, 2nd Sikhs,	587	
14	Rajendra Sahai,	.. Jemadar, 44th G. L. Infy.,	649	
15	Shamehad Khan,	.. Naick, Guides Corps,	447	

1898.

(Full Marks, 900).				
1	Seraf Mal,	.. Duffadar, 14th B. Lancers,	852	Higher Standard.
2	Amar Singh,	.. Sepoy, 4th Sikh Infantry,	834	
3	Kishan Singh,	.. Naick, 1st Sikh Infantry,	826	
4	Harnam Singh,	.. Sowar, 1st Punjab Cavalry,	800	
5	Hira Singh,	.. Naick, 15th Sikh Infantry,	793	
6	Alla Ditta,	.. Lance-Naick, 2nd P. Infy.,	780	
7	Dilawar Khan,	.. Lance-Naick, 31st P. Infy.,	787	
8	Mit Adlam Khan,	.. Sowar, 2nd P. Cavalry,	714	
9	Mirza Bahim Beg,	.. Havildar, 3rd B. N. Infy.,	708	
10	Ata Muhammad Khan,	.. Sepoy, 30th Punjab Infy.,	698	
11	Jones Khan,	.. Havildar, 1st Punjab Infy.,	684	
12	Nawab Khan,	.. Duffadar, 10th B. Lancers,	669	
13	Nizamuddin,	.. Sepoy, Guides Infantry,	616	
14	Kamr,	.. Sepoy, Guides Infantry,	612	
15	Karam Singh,	.. Sowar, Guides Cavalry,	590	
16	Lal Singh,	.. Jemadar, 19th B. Lancers,	590	
17	Kashin Ram,	.. Lee-Duffadar, Guides Cav.,	560	
18	Hazrat Ghulam Kadir Khan,	.. Kote Duffadar, 15th B. Cav.,	494	

1899

(Full Marks, 700).				
1	Ramnan Khan,	.. Naick, 3rd Sikh Infantry,	687	Higher Standard.
2	Alam Khan,	.. Lance-Naick, Guides Infy.,	687	
3	Dost Muhammad,	.. Lance-Duffadar, 5th P. C.,	633	
4	Mut Singh,	.. Sowar, 6th Bengal Cavalry,	631	
5	Ikkal Singh,	.. Sowar, 16th B. Cavalry,	615	
6	Khadim Shah,	.. Havildar, 19th P. Infantry,	610	

YEARLY LIST.

1889.

Ranking in Transactions.	Names.	Rank and Corps.	Marked	Remarks.
7	Nadhan Singh,	Sowar, 2nd B Cavalry, ..	605	
7	Nur Khan,	Sowar, 11th B Lancers, ..	605	
7	Gokal Chand,	Duffadar, Guides Cavalry, ..	605	
10	Kartar Singh,	Sowar, 16th B Cavalry, ..	595	
11	Jowand Singh,	Sowar, 3rd Punjab Cavalry, ..	593	
11	Shankar Singh,	Sepoy, Guides Infantry, ..	598	
12	Saleh Muhammad,	Lance-Duffadar, 8th B C, ..	574	
14	Khan Bahadar,	Sowar, 2nd Punjab Cavalry, ..	580	
15	Swaynunder Singh,	Lance-Naick, 7th B Infy, ..	585	
16	Mahammad Sharif,	Sowar, Guides Cavalry, ..	584	
17	Rai Singh,	Havildar, 4th Sikh Infy, ..	640	Higher Standard
18	Shahbaz Mir,	Sowar, 11th B Lancers, ..	588	
18	Garya Singh,	Sowar, 2nd Central I H, ..	598	
20	Diwan Singh,	Naick, 39th B Infantry, ..	510	
21	Azhdar Rat,	Lance-Havildar 48rd G L I, ..	500	
22	Alla Baksh,	Sepoy, 2nd Sikh Infantry, ..	476	
22	Ram Motan Chobe,	Naick, 4th Bengal Infantry, ..	438	
24	Garya Bir,	Naick, 48rd G L Infantry, ..	427	
25	Bahadar Gurang,	Sepoy, 1-3th G Regiment, ..	388	
26	Sayad Haji Gul,	Naick, 6th Punjab Infantry, ..	578	

1890

(Full Marks, 700)

1	Zakir-ud-din,	Duffadar, 5th P Cavalry, ..	628	
2	Fazalud Khan,	Sowar, 15th B Cavalry, ..	610	
3	Sant Singh,	Sepoy, 35th Sikhs, ..	601	
4	Ganga Ram Thapa,	Naick, 44th G L I, ..	536	
5	Fazal Ali,	Sowar, 1st Bengal Cavalry, ..	585	
6	Gunga Singh,	Lee-Havildar, 37th Dogras, ..	578	
7	Iota Ram,	Havildar, 39th B Infantry, ..	578	
8	Hamzaullah Khan,	Jemadar, 17th B Cavalry, ..	587	
9	Fazal Khan,	Lee-Naick, 1st P Infantry, ..	569	
10	M u h a m m a d Asam Khan,	Duffadar, 15th B Cavalry, ..	568	
10	Amar Singh Thapa,	Havildar, 2-5th Goorkhas, ..	568	
12	Hafizulla Khan,	Duffadar, 8th B Cavalry, ..	565	
13	Boetan,	Sowar, Guides Cavalry, ..	564	Higher Standard
14	Gohatan,	Lee-Naick, Guides Infantry, ..	542	
15	Gopal Gharti,	Lee-Naick, 1-5th Goorkhas, ..	526	
16	M u h a m m a d Hasan Khan,	Sepoy, Guides Infantry, ..	528	
17	Fatah Khan,	Sowar, 3rd Punjab Cavalry, ..	520	
18	Rahim-ud-din,	Sowar, 1st Punjab Cavalry, ..	518	
19	Kaam Ali,	Sowar, Guides Cavalry, ..	504	
20	Ahmad Khan,	Duffadar, 15th B Cavalry, ..	496	
20	Yarmukh Singh,	Sowar, 18th Ben Lancers, ..	490	
22	Hedko Thapa,	Lee-Naick, 44th G L I, ..	495	
23	Saitan Mahmud,	Sowar, 11th Ben Lancers, ..	489	
24	Ali Baksh Khan,	Jemadar, 16th B Infantry, ..	459	
26	Sant Singh,	Naick, 10th B Infantry, ..	454	

1891.

Rank	Names.	Rank and Corps.	Marks gained.	Remarks.
(Full Marks, 700).				
1	Sikander Shah,	.. Sower, Guides Cavalry, ..	649	Higher Standard.
2	Sander Singh,	.. Sower, Guides Cavalry, ..	646	
3	Chet Singh,	.. Lee-Naick, 36th P Infy, ..	624	
4	Sachet Singh,	.. Sepoy, 15th Sikhs, ..	603	
5	Hoshur Singh,	.. Lee-Naick, Guides Infy, ...	589	
6	Ganda Singh,	.. Sepoy, 25th Punjab Infy, ...	568	
7	Hazara Singh,	.. Sapper, Bengal S and M, ..	564	
8	Harnam Singh,	.. Sepoy, 5th Punjab Infantry, ..	564	
9	Manga Khan,	.. Lee-Naick, 4th Sikh Infy, ..	557	
10	Narayan Singh,	.. Sepoy, 44th Goorkha Rifles, ..	556	
11	Bedraddin,	.. Sower, 12th Bengal Cavalry, ..	546	
12	Ram Singh,	.. Sepoy, 35th Sikhs, ..	541	
13	Bar Bhas Thapa,	.. Naick, 43rd Goorkha Rifles, ..	532	
14	Lechman Prasad Tiwari,	.. Sepoy, 1st Bengal Infantry, ..	529	
15	Adam Khan,	.. Sepoy, Guides Infantry, ..	528	
16	Nar Khan,	.. Naick, 2nd Punjab Infantry, ..	492	
17	Nabi Baksh,	.. Naick, 13th B Infantry, ..	477	
18	Mawa Thapa,	.. Sepoy, 44th Goorkha Rifles, ..	477	
19	Ajodhya Singh,	.. Sepoy, 16th B Infantry, ..	474	
20	Yasuf Khan,	.. Sower, 5th Bengal Cavalry, ..	472	
21	Banke Pathak,	.. Sepoy, 11th B Infantry, ..	455	
22	Hastur Kana,	.. Sepoy, 1-5th Goorkhas, ..	435	
23	Kham Singh,	.. Sepoy, 32nd Pioneers, ..	411	
24	Nand Lal Singh,*	.. Lee-Naick, 40th B Infy, ..	398	
25	Danda Singh,	.. Sepoy, 5th Punjab Infy, ..	359	

— 0 —

1892.

(Full Marks, 700).				
1	Mahendra Singh,	.. Havildar, 5th Bengal Infy, ..	561	Higher Standard
2	Harnam Singh,	.. Sower, 4th Bengal Cavalry, ..	530	
3	Bhart Singh,	.. Duffadar, 3rd B Cavalry, ..	526	
4	Naur Khan,	.. Naick, Bengal S and M, ..	513	
5	Madho Prasad Trivedi,	.. Sepoy, 10th Bengal Infy, ..	505	
6	Ghulam Hassan,	.. Sower, Guides Cavalry, ..	496	
7	Abdul Ghafoor Khan,	.. Sower, 2nd Bengal Cavalry, ..	492	
8	Bostan Khan,	.. Sepoy, 3rd Sikh Infantry, ..	483	
9	Sher Jang,	.. Naick, 1st Punjab Infantry, ..	480	
10	Uday Ram,	.. Lance-Naick, 6th Bengal I, ..	470	
11	Ghulam Muhammad Khan,	.. Lance-Duffadar, 15th B C, ..	470	
12	Fauzdar Khan,	.. Sower, 1st Bengal Cavalry, ..	468	
13	Kamal Khan,	.. Sower, 2nd Punjab Cavalry, ..	459	

* Left College on 27th March, 1891

YEARLY LIST.

1892.

Serials in Brevetation.	Names.	Rank and Corps.	Marks gained.	Remarks.
14	Shahbaz Beg, ..	Sowar, 3rd Punjab Cavalry,	449	
15	Bamrekhia Singh, .	Nauck, 16th Bengal Infy.,	423	
16	Sattar Khan, .	Lance-Duffadar, 1st P. C.,	427	
17	Datta Ram, ..	Nauck, 16th Bengal Infy.,	425	
18	Ghulam Yasa Khan,	Duffadar, 16th B. Cavalry,	416	
19	Mahin Singh, ..	Nauck, Guides Infantry, ..	402	
20	Wali Muhammad Khan, ..	Sowar, 8th Bengal Cavalry,	401	
21	Musahib Khan, ..	Duffadar, 17th Bengal C.,	401	
22	Muhammad Nahu, .	Lance-Duffadar, Guides C.,	391	
23	Rampadarth Pande, .	Lance-Nauck, 4th Bengal I.,	375	
24	Rambhadr Thapa, .	Sepoy, 44th Goorkha Rifles,	365	
25	Barhas Ali, .	Nauck, 2nd Sikh Infantry,	365	
26	Hayat Baksh, ..	Sepoy, Guides Infantry, ..	351	

— o —

1893.

(Full Marks, 700).

1	Adalat Khan, ..	Sepoy, 2nd Punjab Infy. ..	602	
2	Khan Malla, ..	Sowar, Guides Cavalry, ..	597	
3	Karamat Khan, ..	Sowar, 1st Bengal Cavalry,	586	
4	Abdulla Khan, ..	Duffadar, 11th B. Lancers,	585	
5	Ghulam Nahi, ..	Sepoy, Guides Infantry, ..	475	
6	Ganga Dyal Singh,	Nauck, 2nd Bengal Infantry,	574	
7	Muhammad Akram Khan, .	Sowar, 9th Bengal Lancers,	571	
8	Kashmira Singh, ..	Lance-Duffadar, Guides Cav.,	566	
9	Waseem Singh, ..	Sepoy, Guides Infantry, ..	545	
10	Ram Singh, ..	Nauck, 14th Bengal Infy.,	538	
11	Seyd Rasool, ..	Havildar, 28th Ben Infy.,	537	
12	Gardit Singh, ..	Nauck, 45th Bengal Infy.,	516	
13	Bahar Singh, ..	Sowar, 3rd Punjab Cavalry,	514	
14	Tilbu Bhandari, ..	Sepoy, 1-5th Goorkhas, ..	499	
15	Sedik Muhammad Khan, ..	Sowar, 4th Bengal Cavalry,	496	
16	Mahadeo Singh, ..	Sepoy, 17th Bengal Infy.,	495	
17	Ghulam Rasool, ..	Nauck, 3rd Punjab Infantry,	495	
18	Amir Khan, ..	Kote Duffadar, 15th Ben L.,	492	
19	Bahawal Din, ..	Sowar, 3rd Punjab Cavalry,	492	
20	Mahadeo Singh, ..	Sepoy, 8th Bengal Infantry,	485	
21	Shah Latif, ..	Lance-Nauck, 6th P. Infy.,	479	
22	Fazadar Khan, ..	Nauck, 12th Bengal Infy.,	428	
23	Beglar Khawin, ..	Havildar, 2-2nd Goorkhas,	297	Failed to qualify.
24	Shir Muhammad Khan, ..	Lance-Duffadar, 17th B. C.,	..	Remanded.
25	Kalla Singh, ..	Sepoy, 18th Bengal Infy.,	..	Dead.
26	Gopal Singh, ..	Havildar, 24th Bengal Infy.,	..	

1894.

Ranking in Examination.	Name.	Rank and Corps.	Marks gained.	Remarks.
(Full Marks, 700)				
1	Mithu Dm.	.. Sepoy, Bengal S and W...	588	} Higher Standard.
2	Loder Singh.	.. Sepoy, 15th Bengal Infy.	591	
3	Dost Muhammad.	.. Sowar, 3rd Punjab Cavalry.	577	
4	Qhiv Rām.	.. Sowar, Guides Cavalry.	568	
5	Jabangir Khān.	.. Sowar, 1st Bengal Cavalry.	554	
6	Bagh Singh.	.. Lee-Naick, 7th Ben Infy.	558	
7	Mahdi Khān.	.. Sowar, 9th Bengal Lancers.	552	
8	Isher Singh Gurung.	.. Naick, 1-1st Goorkha.	547	
9	Rampadarath Singh.	.. Sepoy, 13th Bengal Infy.	546	
10	Dhanman Gurung.	.. Sepoy, 3-1st Goorkha.	539	
11	Bhois Singh.	.. Havildar, 8th Bengal Infy.	5-1	} Higher Standard.
12	Hoshur Singh Thapa.	.. Sepoy 3-2nd Goorkha.	529	
13	Ghulam Ali.	.. Lee-Naick, 2nd P Infy.	517	
14	Krishnamand Tiwar.	.. Sepoy, 3rd Bengal Infantry.	516	
15	Khasan Singh.	.. Lee-Duffadar, 4th B Cav.	513	
16	Fateh Muhammad.	.. Duffadar, Guides Cavalry.	512	
17	Sher Singh.	.. Havildar, Bengal S and M.	508	
18	Pindal.	.. Havildar 4th Punjab Infy.	507	
19	Ghulam Haider.	.. Naick, 28th Bengal Inf.	505	
20	Abdul Subhan Khān.	.. Sowar, 3rd Bengal Cavalry.	488	
21	Mir Wali.	.. Lance-Naick, Guides Infy.	481	} Higher Standard.
22	Muhammad Afzal.	.. Naick, Guides Infantry.	472	
23	Najja Khān.	.. Naick, 1st Sikh Infantry.	471	
24	Malang.	.. Sepoy, 2nd Punjab Infy.	468	
25	Jamsher Khān.	.. Duffadar, 17th Ben Cav.	445	
26	Margul Khān.	.. Havildar, 33rd Madras Infantry (3rd Burma Bn).	425	

1895.

(Full Marks 700).				
1	Man Singh.	.. Lance-Naick, 87th B Infy.	588	} Higher Standard.
2	Gopadhar Singh.	.. Sepoy, 2nd Bengal Infy.	583	
3	Imyat Ali.	.. Sowar, 1st Punjab Cav.	579	
4	Hafiz Mahmud.	.. Sepoy, 40th Bengal Infy.	568	
5	Ghulam Serwar Khān.	.. Kote Duffadar 15th B L.	548	
6	Shahsada Ahmad Mir.	.. Duffadar, Guides Cavalry.	537	} Higher Standard.
7	Mir Jafar.	.. Lance-Naick, Guides Infy.	520	
8	Abdul Wahid.	.. Sepoy, 33rd (3rd Burma) Madras Infantry.	517	
9	Fateh Muhammad.	.. Sepoy, 33rd (3rd Burma) Madras Infantry.	512	
10	Musa Ram Khān.	.. Sowar, 6th Bengal Cavalry.	467	

YEARLY LIST.

1898.

Serial No. in List.	Names.	Rank and Corps.	Marks gained.	Remarks.
(Full Marks, 700)				
1	Sunder Singh,	• Sepoy, 31st Madras Infy.,	544	} Higher Standard.
2	Ayun Khan,	• Lce.-Duffadar, Guides Cav.,	589	
3	Madho Ram,	• Lce-Naik, 44th Gurkha Rifles,	599	
4	Sheikh Abdulla,	.. Lce-Naik, 4th Bombay I.,	595	
5	Ghulam Hassan,	.. Lce-Duffadar, Guides Cav.,	590	
6	Manna Singh,	• Sepoy, 5th Panjab Infy.,	592	
7	Achhar Singh,	.. Lce-Duffadar, 11th B. L.,	498	
8	Dan Singh Negi,	• Rifleman, 89th Garhwal R.,	448	
9	Khuskhal,	• Sepoy, Guides Infantry, ..	425	
10	Nur Ahmad,	.. Lce-Naik, Guides Infy.,	423	

ABSTRACT OF RESULTS OF EXAMINATIONS.

[illegible]

LIST OF PRIZEMEN.

THE GOVERNMENT PRIZE OF 1,000 RUPEES.

1866	Lieut. A. C. Wither.	1871	Lieut. C. E. Buller.
1867	" R. Gordon.	"	" T. O. Wingate.
"	" W. S. Lillingston, M.A.	1872	" G. M. Bellman.
1868	Ensign E. C. Elliston.	"	" A. E. Ward.
1870	Capt. C. E. D. Branson.	1873	" H. A. Graves.
1871	Lieut. F. L. Graves.	1874	" W. T. McLaughlin.

THE COUNCIL OF INDIA PRIZE OF 1,000 RUPEES.

1868	Mr. W. D. Brockman.	1879	Mr. J. Willecocks.
1861	" F. J. Williams.	1881	" W. P. Hensden.
1863	" C. B. Leupolt.	1883	" F. W. Vynall.
1864	" E. A. Sibald.	1888	" O. Oertel.
1865	" G. W. Dodsworth.	1894	Fakir Chand.
1867	" P. Nelson.	1896	Rala Ram.
1868	" H. Graves.	1897	P. B. Chandé Lal.
1869	" C. Evans.	1898	Mr. J. Eaglesome.
1870	" O. Greenwood.	1899	Chandú Lal.
1871	" J. P. Scotland.	1890	Bepin Behari Chakravarti.
1872	" W. Willecocks.	1891	Narendra Kumar Mitra.
1873	" E. W. L. Hawkins.	1892	Mr. J. M'F. Fetter.
1875	" E. W. L. Toca.	1893	Chhoto Lal.
1876	Kramachandra Bandhyopadhyay, B.A.	1894	Mr. T. S. Fitzpatrick.
1877	Mr. J. T. Farrant.	1895	Kaikhorn Sorabji Patack.
1878	" C. S. R. Palmer.	1896	Mr. E. A. Scott.

THE THOMSON GOLD MEDAL.

1866	Lieut. A. C. Wither.	1875	Mr. W. J. Greer.
1867	" W. S. Lillingston, M.A.	1876	" L. J. S. Evans.
1868	Mr. E. J. Keelan.	1877	" B. Q. Benson.
1869	Lieut. S. J. Dunlop.	1878	" C. S. R. Palmer.
1870	Capt. C. E. D. Branson.	1879	" J. Willecocks.
1871	Mr. E. P. W. Foster.	1881	" H. W. James.
1873	" W. Willecocks.	1883	" D. M. Lister.
1875	" A. J. P. Jones.	1883	" O. Oertel.
1876	Lieut. W. T. McLaughlin.	1884	" R. J. Powell.

LIST OF PRIZEMEN.

THE THOMSON GOLD MEDAL.—(Continued).

1885	Mr E. A. W. Phillips.	1891	Mr. B. Cannell
1886	" B. Wall	1892	" J. M'F. Petters.
1887	" A. H. Wollaston.	1893	" V. Stannion.
1888	" H. W. Purry.	1894	" E. S. Christie.
1889	" H. W. M. Ives.	1895	" H. W. Joyce.
1890	Bopin Behari Chakravarti.	1896	" E. A. Scott

THE CAUTLEY GOLD MEDAL.

1889	Mr J. B. Sparks	1891	Mr J. Toose
1893	" C. B. Leupold.	1892	" F. W. Vyall.
1894	" E. A. Sibold	1893	" O. Oertel.
1896	Lieut. A. C. Wither	1894	Fakir Chand
1897	Mr P. Nelson.	1895	Rala Rám
1898	" H. Graves	1897	Bhupat Rai.
1899	" O. Evans.	1898	Mr J. Eaglesome
1870	" J. S. Slater.	1899	P. C. Chandú Lal
1871	Lieut. F. L. Graves.	1890	Bopin Behari Chakravarti.
1872	Mr W. Wilcocks	1891	Narendra Kumar Mitra.
1873	Lieut. H. A. Graves.	1892	Mr J. M'F. Petters.
1875	Mr. R. W. L. Toose.	1893	Chhoto Lal
1876	" H. Granville.	1894	Arobinda Prakash Mullick
1877	" J. T. Farrant	1895	Karkhoun Sorabji Patuck.
1878	" C. S. R. Palmer	1896	Raghubir Prasad Verma
1879	" C. E. V. Goumont		

THE THOMSON PRIZE OF 250 RUPEES.

1879	Narayan Das	1886	Rala Rám.
1872	Bároda Prasháda Bona.	1887	P. B. Chandú Lal.
1873	Ganga Rám	1889	Chandú Lal
1875	Mahendranáth Chakravarti, M. A.	1890	Bopin Behari Chakravarti.
1876	Krishnaschandra Bandyopadhyáy, M. A.	1891	Narendra Kumar Mitra
1878	Rajjan Lal	1893	Chhoto Lal
1879	Suryan Dás, M. A.	1894	Kanhaya Lal
1881	Brij Mohan Lal	1895	Karkhoun Sorabji Patuck
1883	Rajeswar Mitra.	1896	Raghubir Prasad Verma
1884	Fakir Chand.		

GENERAL MACLAGAN'S PRIZE FOR PHYSICAL SCIENCE.

1861	Mr. E. J. Williams.	1866	Private J. Chad
1863	Lieut. W. H. Wilkins	1867	Mr. P. Nelson
1865	" E. W. Sansoulls.	"	Gunner C. Evans (Sutro)
1865	" L. Watell	1868	Mr. C. Evans
"	Private R. R. Walsh.	"	" E. Hodges
1866	Lieut. A. C. Wither.	1869	" C. Evans.

GENERAL MAGRAGAN'S PRIZE FOR PRACTICAL SCIENCE--(Continued).

1869 Troop Sergt.-Major W. Hill.	1881 Mr. W. P. Howden.
1870 Mr. C. Greenwood.	1882 " G. T. Anthony.
" Corpl. E. Hotchkiss.	1883 " O Oertel.
1871 Lieut. F. L. Graves.	1884 Fakir Chand.
" Private J. Calnan.	1885 Mr. A. M. Beaton.
1872 Mr. W. Willcocks.	1886 Raja Rám.
" Sergt. G. Shaw.	1887 Ganga Rám.
1873 Mr. F. G. Fox.	1888 Mr. H. W. Perry.
1874 Lieut. W. T. McLaughlin.	1889 Chandó Lal.
1875 Mr. R. W. L. Tooss.	1890 Mr. F. W. Allom.
1876 " C. E. Housden.	1891 Narendra Kumar Mitas.
1877 " W. A. Bagley.	1892 Mr. O. H. West.
1878 " W. E. T. Bennett.	1893 Chhote Lal.
" Sri Govind.	1894 Kanhaiya Lal.
1879 Mr. J. Willcocks.	1895 Kankhara Surabji Patock.
" " C. E. V. Goument (<i>Special</i>).	1896 Baghubar Prasad Verma.

COL MEDLEY'S PRIZE FOR CIVIL ENGINEERING.

1863 Mr. C. B. Leopold.	1873 Mr. R. W. L. Hawkins.
1864 Lieut. F. D. M. Brown, v. G.	1874 Lieut. W. T. McLaughlin.
1865 Mr. G. W. Dodsworth.	1875 Mr. W. J. Greer.
1866 Lieut. A. C. Wither.	1876 " W. MacDonald.
1867 Mr. F. Nelson.	1877 " J. T. Ferrant.
1868 " H. Graves.	1878 " C. S. R. Palmer.
1869 " C. Evans.	1879 " J. Willcocks.
1870 Lieut. H. R. LeM. Carey.	1881 " W. P. Housden.
1871 " F. L. Graves.	1882 " D. M. Lister.
1872 Mr. W. Willcocks.	1883 " O Oertel.

LT.-COL. BRANDRETH'S PRIZE FOR CIVIL ENGINEERING.

1864 Mr. O. C. Ollenbach.	1888 Mr. H. W. Perry.
1865 " E. A. W. Phillips.	1889 " H. A. C. Muller.
1866 Raja Rám.	1890 Bepin Behari Chakravarti.
1867 Mr. R. A. Blunt.	1891 Mr. F. M. Levi.

COL BROWN'S SILVER MEDAL FOR CIVIL ENGINEERING.

1892 Mr. J. M'F. Fellers.

LT.-COL. CLIBBORN'S SILVER MEDAL FOR CIVIL ENGINEERING.

1893 Mr. A. C. Vermaire.	1894 Mr. H. W. Joyce.
1894 " M. E. Collins.	1896 " E. A. Scott.

LIST OF PRIZES.

RAI RAHADUR KUNHYA LAL'S PRIZE OF 50 RUPEES.

1870 Radhi Lal	1874 Jagdis Ray.
1871 Bhagat Singh.	1875 Sivadatta Pande, B.A.
1872 Balmochand.	

RAI RAHADUR KUNHYA LAL'S GOLD MEDAL.

1876 Bakshai Rām Singh.	1887 Bhupat Rai.
1877 Mohan Lal Katocha.	1888 Devi Das.
1878 Batta Lal.	1889 P C Chand Lal.
1879 Kanhiya Lal	1890 Radhika Naman.
1881 Kali Krishna Mukhopādhyāy.	1891 Janardan Joshi.
1882 Nihal Choud	1892 Charn Chandra Ray.
1884 Bishambar Nath.	1894 Jodindra Mohan Ray
1885 Ishwari Prasad.	1895 Bishan Swarup.
1886 Sheo Nath.	1896 Triloke Nath.

LIEUT. MAYOOCK'S PRIZE FOR MECHANISM

1875 Mr E J. Ramsay	1877 Mr B C. Bensley.
1876 „ H. E. Grant.	1878 „ E. Claxton.

CAPT CUNNINGHAM'S PRIZE FOR APPLIED MATHEMATICS.

1876 Mr H Graville	1877 Mr J T Farrant.
Lieut-Sergeant A B Morgan.	„ Drummer A. Sullivan.

RAJU KRISHNA CHANDRA BANERJEE'S PRIZE FOR MATHEMATICS

1879 Surjan Das, B.A.	
-----------------------	--

MR. SMART'S PRIZE FOR SURVEYING.

1874 Mr J H Wilham.	1875 Mr W. J. Greer.
---------------------	----------------------

LIEUT. MAYOOCK'S PRIZE FOR SURVEYING

1879 Mr J. Willocks.	1881 Mr H W James.
----------------------	--------------------

LIEUT. HARRISON'S PRIZE FOR SURVEYING.

1882 Mr. D. M. Lathup.	1883 Mr O. Oertel.
------------------------	--------------------

KHAT MEMORIAL PRIZE FOR EXAMINATING.

1874	Loc.-Corpl. C. Beach	1886	Mr F. C. T. Miller.
1877	Drummer A. Sullivan	1889	Corpl. T. McGann.
1878	Loc.-Corpl. W. Sage.	1890	Loc.-Corpl. J. Sykes.
1879	Private H. Nichol.	1891	" F. W. Hart.
1881	Loc.-Corpl. H. Goodwin.	1892	Sergt. J. H. Patterson.
1883	Mr. J. J. O'Reilly.	1893	Loc.-Corpl. E. G. Symons.
1883	" T. Stewart.	"	Sergt. W. H. Tivy.
1884	" A. Johnston.	1894	" H. O. G. Botterill
1885	" F. A. Grant.	1895	Bombr. H. Bailey.
1886	Syama Charan Ghose.	1896	Sergt. O. J. Gyde
1887	Corpl. W. Stock.		

LT.-COL. BRANDRETH'S PRIZE FOR NOTE BOOKS.

1877	Loc.-Corpl. A. Thomas.	1885	Corpl. A. Fairweather.
1878	" J. J. Connell	1886	" J. W. Brown.
1879	Private H. Nichol.	1887	Gunner T. Murray.
1881	Gunner C. M. Syme	1888	" F. W. Parks
1882	Loc.-Sergt. W. Chaloner	1889	Loc.-Corpl. F. A. Chitt.
1883	Sergt. F. Beaufort.	1890	Bombr. W. Lyons.
1884	" H. A. Boyd	1891	Loc.-Corpl. F. W. Hart.

CAUTLEY SILVER MEDAL FOR MATHEMATICS.

1886	Sarendra Nath Mitra.	1892	Thakur Das
1889	Corpl. R. Gray.	1893	Parmanohari Das.
1890	Ram Dayal	1894	Shah Lal.
1891	Loc.-Corpl. F. W. Hart.	1895	Brahmbar Das

THOMASON SILVER MEDAL FOR CIVIL ENGINEERING.

1886	Mr F. C. T. Miller.	1893	Loc.-Corpl. E. G. Symons.
1889	Loc.-Corpl. F. A. Chitt.	1894	Sergt. R. O. G. Botterill
1890	" J. Sykes.	1895	" E. O'Farrell
1891	" F. W. Hart.	"	Mr W. E. Hardinge.
1892	" W. F. Bartram.		

RAI BAHADUR KUNHYA LAL'S SILVER MEDALS.

1887	Madho Das	1889	Dharm Singh.
"	Jagannath	"	Daulat Ram
1888	Sarendra Nath Mitra.	1890	Ahmad Din.
"	Debi Sahay.	"	Tara Chand

LIST OF PRIZEMEN,

RAI BAHADUR KUMTA LAL'S SILVER MEDALS—(Continued).

1891	Atar Singh.	1894	Bir Balli Das.
"	Radhai Lal.	"	Dhani Ram.
1892	Thakur Das.	1895	Sant Singh.
"	Arjun Singh.	"	Ghulam Nabi.
1893	Permesari Das.	1896	Fauzul Hasan.
"	Tulsi Ram	"	Jiwan Mal.

LT-COL BRANDRETH'S PRIZE FOR ESTIMATING

1884	Mitr Sen.	1888	Debi Sahay.
1885	Ram Prasad.	1889	Daulat Ram.
1886	Abdul Latif.	1890	Permesari Das.
1887	Shukhar Chand.	1891	Radhai Lal

LT-COL BRANDRETH'S PRIZE FOR ENGLISH.

1877	Badri Datta.	1881	Shahadda Ali.
1878	Bhatri Singh.	1882	Kapur Singh
1879	Kashi Ram	1883	Shiv Dayal Singh.
1880	Barkat Rai		

LT.-COL BRANDRETH'S PRIZE FOR ROMANISED URDU.

1879	Kashi Ram.	1882	Kapur Singh
1880	Abdulah.	1883	Shiv Dayal Singh.
1881	Gyan Chand.		

RAI BAHADUR BEHARI LAL'S PRIZE FOR LANGUAGES.

1885	Kripa Ram	1891	Devi Dial
1886	Sikandar Ali.	1892	Ram Lakhan Lal,
1887	Mansaddi Lal.	1893	Subel Singh.
1888	Devi Sahay	1894	Dhani Ram
1889	Shiv Narayan	1895	Tirath Ram.
1890	Peshora Singh.		

COLLEGE PRIZES

GENERAL MERIT.

1854	Mr G Swetenham	1855	Mr C Bolles
"	Corpl G Drummond.	"	" R E Forrest.
"	Mansab Ray	"	Madhusudan Chattopadhyay
"	Fauzali Khan.	"	Gunner W Roberts.
"	Bans Gopal.	"	Sahab Ray.
"	Jamál-ad-dín.	"	Shambhu Das.

GENERAL MERIT—(Continued).

1853	Sant Lal	1878	Kishi Ram.
1856	Leont T. E. Dickens.	1874	Sergt J Warburton.
"	Bombt G Davies.	"	Bal Surap.
"	Gunner J A Stewart.	1875	Private A Anderson
"	Bani Prasad	"	Ram Chandra.
"	Amir Hussain.	1876	Gunner W Martin
"	Baldoo Prasad.	"	Thakur Das.
1858	Star-Sergeant J Keane.	1877	Drummer A Sullivan
"	Private J Gilmore.	"	Dahi Singh
"	Rastam Beg	1878	Lee-Corpl. A. H. Rice.
1859	Corpl W Lennox.	"	Sada Nand
"	Sergt J Hall.	1879	Mr A J Fluke.
"	Corpl J Pearson.	"	Muhammad Inadad Hasan.
"	Matra Das (1)	1880	Bhagat Ram
1860	Corpl W. Martin.	1881	Mr. H. H. D Johnston.
"	Fateh Chand.	"	Shahzad Ali.
"	Mangal Hay.	1882	Mr J J O'Reilly
1861	Private W Gill	"	Girdhari Lal.
"	Afzal Shah	1883	Mr J Harford.
1862	Corpl J Culbert.	"	Chandi Prasad.
1863	Sergt W Graham	1884	Gujar Mall
"	Ali Muhammad.	"	Mitr Sen.
1864	Gunner D Stuart	1885	Prayag Das.
"	Sohan Lal	"	Monahi Ram (1)
1865	Sergt W J Flynn	1886	Mr G Reynolds.
"	Gunner J Turner (<i>Extra</i>).	"	Abdul Latif.
"	Corpl C B Newman (<i>Special</i>).	1887	Mr C Jenkins.
"	" H Egan (<i>Special</i>).	"	Jagannath
"	" A. Tate (<i>Special</i>).	1888	Mr F C. T. Müller.
"	Tajammal Hussain	"	Debi Sahay
"	Private S Fullwood	1889	Lee-Corpl. F A. Chik.
1866	Abdul Gani	"	Danist Ram
1867	Corpl. W Wiseman.	"	Bombt W Lyons
"	Ramji Lal	"	Tara Chand.
1868	Mr E. Hodges	1891	Lee-Corpl F W. Hart.
"	Sepoy Ala Budhaya (<i>Special</i>).	"	Radhai Lal.
"	Muhammad Ali	1892	Sergt J H Patterson.
1869	Private J Higgins.	"	Ajra Singh
"	Sri Ram	1893	Lee-Corpl E. G. Symons.
1870	Private W Taylor.	"	Tulan Ram.
"	Amrit Ray	1894	Sergt. R. O G Botterill.
1871	Private J Calnan.	"	Dhan Ram
"	Sankar Lal	1895	Mr E. B Connell.
1872	Sergt G Shaw	"	Ghulam Nahi
"	Mr. W. J Greer (<i>Extra</i>)	1896	Sergt C. J Gyda.
"	Choti Lal (1)	"	Jivan Mal.
1873	Private W. Hay		

LIST OF PRISONERS.

MATHEMATICS

1853	Mr H. J. Nuthall.	1876	Lakshpat Ráy.
"	Corpl. J. Geddes.	1877	Private A. H. Clarke.
"	Mr O Polltan.	"	Sergt M. Suen.
1854	Jawáhir Lal.	"	Bedri Datta.
1855	Madhundan Chattopádhya.	1876	Lee-Corpl. A. H. Rice.
1856	Corpl. J. Lawson.	"	Sri Govind
1858	Private G. Clarke.	1879	Mr A. J. Fluke.
"	Náriyan Das	"	Tota Ram.
1859	Corpl. W. Leeson.	1880	Ganpat Singh
1860	" D Graham.	1881	Mr S. C. Vivian.
1861	" P. Heyward	"	Miran Bekbeh.
"	Leckmi Prasad.	1882	Mr J. J. O'Reilly.
1862	Corpl. J. Culbert	"	Girdhari Lal.
"	Khádím Ah.	1883	Mr. T. Stewart
1863	Sergt. W. Graham	"	Nahar Singh
"	Baldeo Prasad	1884	Gujar Mall
1864	Gunner D. Stuart	"	Gopi Nath.
"	Sohan Lal	1885	Radha Lal.
1865	Lee-Corpl. C. Kerr	"	Munshi Rám (1)
"	Sri Prasad.	1886	Hari Bhuvan Mukerj.
1866	Mr F. Nelson.	"	Jamti Prasad
"	Private S. Fullwood.	1887	Gunner H. Howard
"	Kándan Lal	"	Bhagwan Das (1)
1867	Private H. Morgan	1888	Sarendra Nath Mitra.
"	Rámpí Das	"	Debi Babay
1868	Mr E. Hodges.	1889	Corpl. R. Gray
"	Muhammad Ah.	"	Daulat Rám.
1869	Corpl. W. Pearson.	1890	Rám Dayal
"	Sri Rám	"	Tara Chand
1870	Corpl. E. J. Topple.	1891	Lee-Corpl. Y. W. Hart.
"	Amrit Ray.	"	Radhan Lal
1871	Mr I. Culvert.	1892	Thakur Das.
"	Sadullah	"	Arjun Singh
1872	Sergt. G. Shaw	1893	Parmeshari Dás.
"	Muhammad Shah (2)	"	Ajodhia Nath
1873	Private H. McGraw	1894	Shadi Lal.
"	Fazl Muhammad	"	Dham Rám.
1874	Parbhu Dayal.	1895	Bishambar Das.
1875	Private A. Anderson.	"	Kán Rám
"	Deba Prasad.	1896	Sergt. C. J. Gyde.
1876	Chandan Gopal.	"	Atma Rám.

CIVIL ENGINEERING.

1853	Sergt. M. Duggan	1854	Corpl. G. Drummond.
"	Akhar Beg	"	Shewkh Becha.
1854	Mr. H. Garbett.	"	Bans Gopal.

CIVIL ENGINEERING—(Continued).

1854	Jawahir Lal.	1878	Jugal Kishore.
1855	Gunner W Roberts.	1879	Mr. A. J. Fluke.
1859	Sergt. J. Hall.	"	Muhammed Imdad Husein.
"	Corpl. G. Pearson	1880	Ramji Lal.
1861	" P Heyward.	1881	Lee-Corpl. H. Goodwin.
"	Ganesahi Lal.	"	Mustqum
1862	Corpl. L. G. Hill.	1882	Mr. J. J. O'Reilly
"	Ahmad Hasan	"	Girdhari Lal.
1863	Sergt. W. Graham	1883	Mr. J. Harford.
"	Private H. Hurd (<i>Extra</i>).	"	Nahar Singh.
"	Balmokand.	1884	Mr. B. J. Powell.
1864	Private J. Paterson.	"	" A Johnston.
"	Sohan Lal	"	Mitr Sen.
1865	Sergt. W. J. Flynn.	1885	Prayag Das.
"	Tajammal Husein	"	Chajun Mal
1866	Private B. Fullwood.	1886	Mr. G. Reynolds
"	Abdul Gani	"	Joshua Ezekiel
1867	Sergt. J. Ainsworth.	1887	Corpl. W. Stock.
"	Ramji Lal	"	Bhagwan Das (1)
1868	Mr. E. Hodges	1888	Mr. F. C. T. Muller.
"	Sheo Narayan	"	Debi Bahay.
1869	Private P. Collins.	1889	Lee-Corpl. F. A. Chitt.
"	Sri Ram	"	Danist Ram.
1870	Corpl. E. J. Topple	1890	Lee-Corpl. J. Sykes.
"	Anant Ray	"	Farmeshri Das.
"	Hakim Ali (<i>Extra</i>)	1891	Lee-Corpl. F. W. Hart.
1871	Private M. Doyle (1)	"	Radhai Lal.
"	Balmokand	1892	Lee-Corpl. W. F. Bartram.
1872	Sergt. G. Shaw	"	Arjun Singh
"	Sunder Singh.	1893	Lee-Corpl. E. G. Symons.
1873	Private H. McGraw	"	Muhammad Azum
"	Duffadar Dawi Datta.	1894	Sergt. R. O. G. Bottrell.
1874	Fram Singh	"	Sant Ram.
1875	Private A. Anderson.	1895	Sergt. E. O'Farrell
"	Hará Lal.	"	Mr. W. E. Hardinge
1876	Gunner W. Martin.	"	Ghulam Nabi.
"	Thakur Das.	"	Thirath Ram.
1877	Drummer A. Sullivan.	1896	Sergt. C. J. Gyde
"	Jafr Husein.	"	Jiwan Mal.
1878	Lee-Corpl. A. H. Rice.		

SURVEYING.

1883	Akbar Beg.	1884	Staff-Sergt. P. Keay.
1884	Mr. L. Bean.	"	Bans Gopal.
"	" E. G. Hanna.	1885	Madhusudan Chattopadhyay.

LIST OF PRISONERS.

SURVEILLING—(Continued).

1855	Gunner J H Sharpe.	1881	Mr. H. H. D. Johnston.
1856	" W Gatehouse	"	Shahsadd Ah.
1858	Khwaja Abdur Rahman.	1883	Mr. J. M Taylor (Esra).
1859	Corpl W Lennox.	"	" F W Wilkinson.
"	Sergt. P C Caernarton.	"	Manak Chand
"	Muhammad Hussain	1888	Pto. C Allen.
1860	Corpl F Burke	"	Munshi Lal.
"	Fateh Chand.	1884	Mr R. J Powell.
1861	Private W Gill	"	Debi Sahai.
"	Fash-ud-din	"	Misir Sen
1862	Corpl L G Hill	1885	Mr E A W Phillips
"	Muhammad Zakaria	"	" F A Grant.
1863	Gunner R. Marshall.	"	Haro Lal
1864	" D Stuart	1886	Mr C H Wollaston.
"	Bohan Lal	"	" R. Butcher
1865	Sergt W J Flynn.	"	Joshua Ezekiel
"	Tajammal Hussain.	1887	Mr. F W. Schönemann.
1866	Private H. Clifton	"	" C Jenkins.
"	Din Dayal	"	Jagannath.
1867	Private J. H. Farley.	1888	Mr H W Perry
"	Ramji Lal	"	" F. C T Moller.
1868	Mr E Hodges	"	Debi Sahay
"	Muhammad Ali.	1889	Corpl B. Gray
1869	Private F Collins.	"	Daulat Ram
"	Sri Ram	1890	Bepin Behari Chakravarti
1870	Private W. Taylor.	"	Mr R W Dover
"	Fateh Chand.	"	Ahmad Din.
1871	Gunner H. St. Aubyn.	"	Pertap Singh
"	Ahmad Beg (1).	1891	Mr. C B Barrie.
1872	Sergt G Shaw	"	Lee-Corpl F W Hart.
"	Harchet Singh.	"	Radhai Lal
1873	Private W. Hay	1892	Mr J M F Patters.
"	Amir Ali.	"	Sergt. J H Patterson
1874	Muhammad Ibrahim	"	Arjun Singh.
1875	Private A. Anderson.	1893	Mr V Stanton
"	Ram Chandra.	"	Lee-Corpl E. G. Symons.
"	Debi Prasad (Esra)	"	Tulsi Ram
1876	Lee-Corpl W J. Orlerson	1894	Mr T S. Fitzpatrick.
"	Banna Ram	"	Sergt. B. O. G. Botticell.
1877	Lance-Sergt. J. O'Neill.	"	Ganesh Ram.
"	Debi Singh	1895	Mr H. W Joyce.
1878	Lee-Corpl J. J Connell.	"	Sergt. J Taylor.
"	Sada Nand.	"	Ram Narayan.
1879	Private H. Nichol.	1896	Mr. E. A. Scott.
"	Utiam Singh.	"	Sergt. C J. Gyde.
1880	Kishan Lal	"	Jiwan Mal.

DRAWING.

1853	Corpl J. Clarke.	1872	Mr W. Willocks.
"	" J Riley	"	Sergt. G Shaw.
"	Mr. W. Sharpe.	"	Obot Lál (1).
1854	Sheikh Beeba.	1873	Mr R. W. L. Hawkins.
"	Jamna Das.	"	Private W Hay.
1855	Gunner W Roberts.	"	Ralla Rám
1856	Mr W B Maerona.	1874	Lieut. W T McLaughlin.
"	Corpl J Hurst.	"	Indyat AIL
"	Gobind Prasad.	1875	Mr. W J Green.
1858	Corpl. A. C Galbreath	"	Loc-Corpl C. Williams
"	Private H. McG McPherson	"	Bará Lál
"	Khwája Abdúr Rahmán.	1876	Mr W B Gwyther.
1859	Sergt. P C Charnerton	"	Chandan Gopal.
"	Mahammed Mohan.	"	Thakúr Das
1860	Corpl W Canale	1877	Mr B C Bensley
"	Kaleh Chand.	"	Lance-Corpl A. Thomas.
1861	Private J. Webster.	"	Panjab Singh
"	Shád Lál	1878	Mr R L Heulig
1862	Corpl A Lawson	"	Corpl H A. Rogers
"	Bhagwén Sahay.	"	Sada Nand.
1863	Gunner R. Marshall.	1879	Mr J. Willocks.
"	Private J Newland (Retrs).	"	" A. J Fluke
"	Ali Muhammad	"	Muhammad Imdad Hussan.
1864	Loc-Sergt R. Danlop	1880	Nasir Ali.
"	Shán Lál	1881	Mr. W. P Honsden
1865	Corpl. G Buchanan.	"	" H H D Johnston.
"	" H. Walker.	"	Attar Singh
"	Tajammal Hussan.	1882	Mr C P McLeod.
"	Sri Prasad.	"	" J J O'Reilly
1866	Lieut J A. Little.	"	Kadir Bakhsh
"	Private H Clifton.	1883	Mr O Oertel.
"	Qr-Mr Sergt W Phillips.	"	Hari Chand
"	Abdul Gani	"	Munshi Lál
1867	Corpl. W. Wiseman	1884	Bahambar Nath.
"	Ramji Lál.	"	Bomber M Lynch
1868	Corpl. G T Sparks.	"	Ghulám Harder
"	Baskar Lál.	1885	Mr E. A W. Phillips.
1869	Lieut S J Dunlop.	"	Hira Lál
"	Troop Sergt-Major W. Hill.	"	Nural Islam.
"	Jwálá Prasad.	1886	Mr O H Wollaston.
1870	Capt. C. E. D Branson.	"	" G Reynolds.
"	Corpl. H. Woodville.	"	Abdul Latif.
"	Hámad Ali.	1887	P. B Chandá Lál.
1871	Mr J P Scotland.	"	Corpl H Naylor.
"	Private W. Pagan.	"	Balf Nath Sahai.
"	Muhammad Abdóllah.	"	Jagannath.

DRAWING.—(Continued).

1888	Mr H. W. Perry	1892	Abnash Das.
"	" F. C. T. Miller	1893	Mr A. C. Vardra.
"	Muhammad Yusuf	"	Lea-Corpl E. G. Symons.
1889	Lea-Corpl F. A. Chitt.	"	Muhammad Asim.
"	Lajpat Rai.	1894	Mr M. R. Collins
1890	Mr R. W. Dover.	"	" W. L. Wilkinson
"	" J. R. Wilkinson.	"	Dhanu Ram.
"	Said Muhammad.	1895	Mr H. W. Joyce
1891	Mr H. Hughes.	"	Lea-Sergt. A. D'A. McDonough.
"	Lea-Corpl F. W. Hart.	"	Bashir Ahmad
"	Fateh Muhammad	1896	Mr E. A. Scott.
1892	Mr. J. W. Gillman.	"	" G. H. Plomer.
"	Lea-Corpl. W. F. Bartram.	"	Tika Ram

PHOTOGRAPHY.

1863	Private R. Jackson	1883	Mr J. Harford.
1869	Knight G. W. Martin	1884	" O. C. Ollenbach.
"	Sergt. J. McGenty	"	Sergt. J. Hunter.
1870	Corpl H. Woodville.	1885	Mr A. J. Wadley.
1871	Mr G. M. B. Field	"	Corpl A. Fairweather.
"	Gunner H. St. Aubyn.	1886	Mr C. H. Wollaston.
"	Sergt. A. Brandon	"	" T. Bone
1872	Lieut. H. A. Graves.	1887	" F. W. Schünemann
"	Sergt. G. Shaw.	"	Lea-Corpl W. J. Collins.
"	Ce-Sergt. J. Tuck	1888	Mr J. Eaglesome.
1873	Lieut. W. T. McLaughlin.	"	" F. C. T. Müller.
"	Private D. Kirk.	1889	" H. W. M. Ives
1874	Mr W. J. Greer.	"	Lea-Sergt. H. Long.
1875	" H. E. Grant.	1890	Mr E. Verriest.
"	Private A. Learmonth.	"	Bombr. W. Lyons
1876	Mr B. C. Bensley	1891	Mr C. B. Barrie
"	Private H. J. Sharpe.	"	Lea-Corpl F. W. Hart.
1877	Mr R. L. Hwang	1892	Mr. J. M'F. Petters.
"	Lea-Corpl A. Thomas	"	Bombr. W. H. A. Cooper
1878	Mr J. E. Ives.	1893	Chand Chandra Ray.
"	Lea-Corpl A. H. Rice.	"	Lea-Corpl E. G. Symons.
1879	Private H. Nichol.	1894	Mr C. E. Bonhoun.
1881	Mr. F. E. Gwyther.	"	Lea-Sergt. E. J. Wallace.
"	" C. Willford	1895	Mr. H. W. Joyce
1882	" F. W. Vvill.	"	Lea-Sergt. A. D'A. McDonough.
"	" F. W. Wilkinson.	1896	Triloke Nath.
1883	" O. Cortal	"	Sergt. C. J. Gyles.

FZANOZTPE.

1893	Muhammad Asim.	1893	Bashir Ahmad
1894	Abdul Rahman.	1894	Behari Lal.

**List of Donations to the Thomason College for Prizes and
other Miscellaneous purposes**

<i>Year.</i>	<i>Names.</i>	<i>Rupess.</i>
1854	Subscribers to the Thomason Testimonial Fund, - - - -	2,500
"	Sir Proby T. Castley, K.O.B., - - - -	2,000
1855	Lieut. T. Wright, 46th N I, - - - -	100
"	Lieut. W. Marshall, 48th N I, - - - -	100
"	Lieut. T. E. Dickens, Artillery, - - - -	100
"	Lieut. G. Bailie, Artillery, - - - -	100
"	Ensign H. E. Whish, 26th N. I., - - - -	100
"	Lieut. E. L. Earle, Artillery, - - - -	100
"	Lieut. E. Smalley, 26th N I, - - - -	100
"	Lieut. C. B. Whish, 14th Light Dragoons, - - - -	100
"	Lieut. A. B. Melville, 47th N I, - - - -	100
1860	Lieut. E. C. Garstin, 29th N I, - - - -	100
"	Lieut. B. S. Wood, 93rd Highlanders, - - - -	100
1862	Capt. W. H. Mackay, 79th Highlanders, - - - -	100
1864	Lieut. C. E. Shepherd, General List, Infantry, - - - -	100
1865	Lieut. E. W. Semmelle, General List, Infantry, - - - -	100
"	Lieut. B. J. Parsons, 38th N I, - - - -	100
"	H. H. the Maharajah of Cashmere, - - - -	500
"	Lieut. J. E. Sandeman, General List, Infantry, - - - -	100
"	Captain F. G. S. Parker, 64th Regiment, - - - -	100
"	Capt. F. D. M. Brown, v. C., 101st Regiment, - - - -	100
"	Lieut. L. Wavell, 22nd N I, - - - -	100
"	Peter Kany, Esq., - - - -	120
1867	Lieut. W. S. Lillingston, M.A., 7th Hussars, - - - -	200
1868	Lieut. R. C. Elliston, 56th Regiment, - - - -	100
1869	Colonel R. MacLagan, R.E., (for "MacLagan" Prize Endowment,) -	1,000
"	Ismer Chander Sirkar, - - - -	50
"	Sergeant W. Sinclair, R.E., - - - -	50
"	G. W. Dodsworth, Esq., - - - -	100
"	Mr. J. Mole, - - - -	50
"	Mr. J. Lyons, - - - -	50
"	Mr. S. Fraser, - - - -	20
"	Sergeant P. Kelly, - - - -	50
"	Lieut. G. Nolan, - - - -	100
"	Mr. J. Ferris, - - - -	20
"	Lala Behari Lal, - - - -	100
"	Mr. C. Chisholm, - - - -	50
"	Mr. H. Mitchell, - - - -	20

LIST OF DONATIONS.

187

Year.	Names.	Amount.
1869	Mr T. Gray, - - - - -	25
"	Mr J. Southon, - - - - -	25
"	Serge. A. Forsyth, - - - - -	20
"	Mr. J. H. Chapman, - - - - -	25
"	Mr. G. McArthur, - - - - -	50
"	Mr J. Gillan, - - - - -	25
"	Mr. W. Phillips, - - - - -	20
"	Mr C. Collogher, - - - - -	250
1870	Rai Bahadur Kunhya Lal, (for "Kunhya Lal" Prize Endowment,) -	1,000
"	Capt. C. E. D. Branson, 87th F. N. I., - - - - -	100
"	Dr Murray Thomson, M.D., F.R.S.E., - - - - -	200
1872	Lieut. G. W. Martin, 88th Regiment, - - - - -	100
1873	W. Wilcocks, Esq., (to Engineer Student Mess,) - - - - -	100
"	E. Hodges, Esq., - - - - -	100
"	H. H. the Maharaja of Vizianagram, - - - - -	1,000
1874	R. B. Smart, Esq., (Rev. Sur.) (for Surveying Prize,) - - - - -	100
"	R. W. L. Hawkins, Esq., (to Engineer Student Mess,) - - - - -	100
"	Lieut. W. T. McLaughlin, 49th Regiment (to ditto,) - - - - -	100
"	Reginald H. McLaughlin, Esq., (to ditto,) - - - - -	50
1875	V. B. Paterson, Esq., - - - - -	
"	S. Jarman, Esq., - - - - -	
"	F. J. McLaughlin, Esq., - - - - -	
"	R. L. Campbell, Esq., - - - - -	
"	R. W. L. Toose, Esq., (to ditto,) - - - - -	100
"	A. E. Adie, Esq., (to ditto,) - - - - -	50
"	Lieut. S. M. Maycock, R.E., (for Mechanism Prize,) - - - - -	50
"	R. B. Smart, Esq., (Rev. Sur.) (for Surveying Prize,) - - - - -	100
"	W. A. Franken, Esq., Assistant Superintendent, Canal Foundry, (to College Recreation Fund,) - - - - -	50
1876	Lieut. S. M. Maycock, R.E., (for Mechanism Prize,) - - - - -	50
"	Capt. Allan Cunningham, R.E., (for Applied Mathematics Prize,) -	50
"	Subscribers to Keay Memorial, (balance of subscriptions after erecting Tablet,) - - - - -	1,000
1877	H. H. the Maharaja of Jummoo and Cashmere, - - - - -	1,000
"	Rajah of Rutlam, - - - - -	100
"	Capt. Allan Cunningham, R.E., (for Applied Mathematics Prize,) -	50
"	Rai Bahadur Kunhya Lal, (to change the Prize Endowment of 1870 to the "Raj Bahadur Kunhya Lal Gold Medal," similar to Thomson Medal,) - - - - -	1,500
"	Lieut. S. M. Maycock, R.E., (for Mechanism Prize,) - - - - -	50
"	Colonel J. G. Medley, R.E., (yearly since 1868, at Rs 50,) - - - - -	750
"	Major A. M. Brandreth, R.E., (for Note Book and English Prizes,) -	50
"	J. T. Ferrant, Esq., (to Engineer Student Mess,) - - - - -	100
1878	Colonel J. G. Medley, R.E., (for Civil Engineering Prize,) - - - - -	50
"	Lieut. S. M. Maycock, R.E., (for Mechanism Prize,) - - - - -	50
"	Major A. M. Brandreth, R.E., (for Note Book and English Prizes,) -	50
"	Anonymous from Jhansi, - - - - -	100

<i>Year.</i>	<i>Names.</i>	<i>Rupces.</i>
1880	Colonel J. G. Medley, R.E., (for Civil Engineering Prize,) - - -	50
"	Lieut. S. M. Maycock, R.E., (for Surveying Prize,) - - -	50
"	Major A. M. Brandreth, R.E., (for Note Book, English, and Romanised Urdu Prizes,) - - -	70
"	Baba Krishna Chandra Banerji, (for Mathematics,) - - -	50
1881	Colonel J. G. Medley, R.E., (for Civil Engineering Prize,) - - -	50
"	Lieut. S. M. Maycock, R.E., (for Surveying Prize,) - - -	50
"	Major A. M. Brandreth, R.E., (for Note Book, English, and Romanised Urdu Prizes,) - - -	70
"	W. F. Hoosden, Esq., (to Engineer Student Mess,) - - -	100
1882	Colonel J. G. Medley, R.E., (for Civil Engineering Prize,) - - -	50
"	Lieut.-Col. A. M. Brandreth, R.E., (for Note Book, English, and Romanised Urdu Prizes,) - - -	70
"	Lieut. J. H. C. Harrison, R.E., (to Engineer Student Mess,) - - -	100
"	Lieut. J. H. C. Harrison, R.E., (for Surveying Prize,) - - -	50
1883	Colonel J. G. Medley, R.E., (for Civil Engineering Prize,) - - -	50
"	Lieut.-Col. A. M. Brandreth, R.E., (for Note Book, English, and Romanised Urdu Prizes,) - - -	70
"	Lieut. J. H. C. Harrison, R.E., (for Surveying Prize,) - - -	50
1884	Lieut.-Col. A. M. Brandreth, R.E., (for Civil Engineering, Note Book, and English Prizes,) - - -	100
1885	Lieut.-Col. A. M. Brandreth, R.E., (for Civil Engineering, Note Book, and Estimating Prizes,) - - -	100
"	Lala Behari Lal, (for Language Prize,) - - -	15
1886	Lieut.-Col. A. M. Brandreth, R.E., (for Civil Engineering, Note Book, and Estimating Prizes,) - - -	100
"	Lala Behari Lal, (for Language Prize,) - - -	15
1887	Lieut.-Col. A. M. Brandreth, R.E., (for Civil Engineering, Note Book, and Estimating Prizes,) - - -	100
"	Lala Behari Lal, (for Language Prize,) - - -	15
"	Raj Bahadur Kumbha Lal, to found Silver Medals for Natives of Upper and Lower Subordinate Classes, - - -	1,000
1888	Lieut.-Col. A. M. Brandreth, R.E., (for Civil Engineering, Note Book, and Estimating Prizes,) - - -	100
"	Lala Behari Lal, (for Language Prize,) - - -	15
"	Raj Bahadur Kumbha Lal, - - -	100
1889	Lieut.-Col. A. M. Brandreth, R.E., (for Civil Engineering, Note Book, and Estimating Prizes,) - - -	100
"	Lala Behari Lal, (for Language Prize,) - - -	15
1890	Lieut.-Col. A. M. Brandreth, R.E., (for Civil Engineering, Note Book, and Estimating Prizes,) - - -	100
"	Lala Behari Lal, (for Language Prize,) - - -	15
1891	Lieut.-Col. A. M. Brandreth, R.E., (for Civil Engineering, Note Book, and Estimating Prizes,) - - -	100
"	Raj Bahadur Behari Lal, (for Language Prize,) - - -	15
1892	Colonel F. D. M. Brown, V.C., (for Civil Engineering Prize,) - - -	50
"	Raj Bahadur Behari Lal, (for Language Prize,) - - -	15

LIST OF DONATIONS.

139

<i>Year.</i>	<i>Names.</i>	<i>Dupess.</i>
1898	Major J Clibborn, (<i>for Civil Engineering Prize,</i>)	- - - 50
"	Rai Bahadur Behari Lal, (<i>for Language Prize,</i>)	- - - 15
1894	Major J Clibborn, (<i>for Civil Engineering Prize,</i>)	- - - 50
"	Rai Bahadur Behari Lal, (<i>for Language Prize,</i>)	- - - 15
1895	Major J. Clibborn, (<i>for Civil Engineering Prize,</i>)	- - - 50
"	H. H. the Maharaja of Vismnagram, (<i>for Athletics,</i>)	- - - 40
"	Rai Bahadur Behari Lal, (<i>for Language Prize,</i>)	- - - 15
1896	Leut.-Col. J Clibborn, (<i>for Civil Engineering Prize,</i>)	- - - 50
"	H. H. the Maharaja of Vismnagram, (<i>for Athletics,</i>)	- - - 40
"	H. H. the Prime Minister of Nepal, (<i>for a Tower Clock,</i>)	- - - 2,500
1897	Leut.-Col J. Clibborn, (<i>for Civil Engineering Prize,</i>)	- - - 50
"	H. H. the Maharaja of Vismnagram, (<i>for Athletics,</i>)	- - - 40

ENTRANCE EXAMINATION PAPERS, 1898-97.

ENGINEER CLASS.

ENGLISH ESSAY.

The Candidate may write on two of the subjects given below. He should endeavour to excel in good sense and good English, not in quantity.

Hand-writing, spelling, and punctuation will be considered in awarding marks.

SUBJECTS

- 1.—The Sudan Expedition.
- 2.—The best methods of employing private benevolence for the mitigation of widespread famine.
- 3.—The benefits of an Engineering education even to those who may not intend to follow the profession in the future.
- 4.—The influence of *Hope* on the character and conduct of an individual.

HINDUSTANI.

The Hindustani passage is to be translated into fluent English, and where the fluent translation differs from the literal rendering, the latter must be added in brackets, so that the meaning of each word may be made evident to the Examiner.

N.B.—In writing Hindustani words, the Persian character is to be employed. otherwise half the marks will be deducted.

- 1.—Translate into good English:—

ایک روز کا ڈاکر وہ کہ کسی جگہ آندھی تڑپے زور دھون سے آ رہی تھی۔ درختوں
میں ہوا سکنا دہی تھی۔ چاروں طرف آبی گھٹا تھا۔ دھبی تھی۔ ہانڈوں میں لپٹی
خوب آب و قابہ دیکھا دہی تھی۔ لوگوں کی نظروں میں صرف کا سا پتہ دھا تھا۔
پھر موسم کی گھٹا سے سب کے دلوں پر فکر کا ہادل گھون دھا تھا۔ اسی جگہ سڑکی

- (c). If your character had been good the Magistrate would have certainly listened to your advice.
 (d). In my opinion he has not understood the matter.
 (e). How many times have you been told not to do this but you will not obey.

LATIN.

1.—Translate into English—

Eodem die castra promovit et millibus passuum sex a Caesaris castris sub monte coniecit. Postridie ejus diu præter castra Caesaris suas copias reduxit, et millibus passuum duobus ultra eum castra fecit, eo consilio, uti frumento comestatuque, qui ex Sequania et Hædus subportaretur, Caesarem intercluderet. Ex eo die dies continui quinque Caesar pro castris suas copias produxit, et aciem instructam habuit, ut, si vellet Ariovistus proelio contendere, ei potestas non deesset. Ariovistus his omnibus diebus exercitum castris continuit, equestris proelio quotidie contendit.

Give person, number, tense, mood and voices of each of the following verbs as they occur in the above passage—*promovit, intercluderet, fecit, deesset, subportaretur*.

2.—Translate into English—

Dum hæc apud Caesarem geruntur, Labienus eo supplemento, quod nupex ex Italia venerat, relicto Agendic, ut esset impediens præsidio, cum quattuor legionibus Lutetiam proficiscitur. Id est oppidum Parisiorum, positum in insula fluminis Sequanae. Cujus adventu ab hostibus cognito, magnæ ex finitimis civitatibus copie conveniunt. Summa imperii traditur Camulogene Andeco, qui, prope confectus ætate, tamen propter singularem scientiam rei militaris ad eum est honorem evocatus.

Give an example of the ablative absolute from the above passage.

What is the modern name of "Lutetia," and what of the river "Sequana."

Decline *legio, finis, adventus*.

3.—Translate into English one only of the two following passages:—

- (1). "O dea, si prima repetens ab origine pergam,
 Et vacet annales nostrorum audire laborum,
 Ante diem clauso componat Vesper Olympo,
 Nos Troja antiqua, si vestras forte per aures

Troja nomen ut, diversa per sequera vestos
 Forte sua Labycis tempestas appulit oria.
 Sum pius Æneas, raptos qui ex hoste penates
 Classe veho mecum, fama super æthera notus.
 Italiam quero patriam, genus ab Jove summo.
 Bis demum Phrygium concedendi navibus aquor,
 Matre dea monstrante viam, data fata secutus.
 Vix septem convulsus undis Euroque supersunt.
 Ipse ignotus, egens, Libys deserta peragro,
 Europa atque Ana pulsus."

- (ii). "Interea classem velis aptare jubebat
 Anchises, fieret vento mora ne qua ferenti.
 Quem Phœbus interpres multo compellat honore,
 'Conjugio, Anchisa, Veneris dignate superbo,
 Cura deducta, his Pergameis erepte ruinis,
 Ecce tibi Ausonius tellus hanc arripe velis.
 Et tamen hanc pelago præterlabare necesse est:
 Ausoniæ pars ille procul, quam pandit Apollo.
 Vade,' ait, 'o felix nati pietate! quid ultra
 Provehor, et fando surgentes demoror Austros?'
 Nec minus Andromache, digressu mæsta supremo,
 Fert picturatas auri subtemine vestes
 Et Phrygiam Ascanio chlamydem, nec cedit honori;
 Textilibusque onerat donis, ac talia fatur.

4.—Translate into English—

Fora in duobus tum exercitiis erant trigemini fratres non ætate
 nec viribus dispares. Horatius Curiatiosque fuisse satis constat, nec
 ferre res antiqua alia est nobilior: tamen in re tam clara nominum
 error manet, utrius populi Horati, utrius Curiatii fuerint: auctores
 utroque trahunt: plures tamen invenio, qui Romanos Horatios vocent
 hos ut sequar, inclinat animus. Cum trigeminis agunt reges, ut pro
 sua quisque patria dimicent ferro: ibi imperium fore, unde victoria
 fuerit. Nihil recusatur. Tempus et locus convenit. Præquam dimi-
 carent, sedus ictum inter Romanos et Albanos est his lagibus, ut,
 cujusque populi cives eo certamine vicissent, is alteri populo cum bona
 pax imperitaret.

Which were the two peoples to whom the Horatii and Curiatii belonged? What was the result of the conflict between them?

8.—Render into Latin—

- (a). He said this in order that he might deceive the ambassadors of the enemy.
- (b). These things were carried out before Caesar had arrived from Rome.
- (c). When he saw that the hill had been abandoned by the enemy he ordered that the whole of his line of battle should advance.
- (d). At the beginning of winter great multitudes of birds cross the seas.
- (e). During the consulship of Cæcilius and Proculus a treaty was made with the Hernici.

SANSKRIT.

1.—Translate into English the following extracts:—

(a). अस्तिचिन्तो नाम जनपदः । तत्रासन् गृहपत्यस्त्रयः स्त्रीतस्त्रार-
धनाः सोदर्याः । तेषु स्त्रीष्वसु न वर्षे वर्षाणि द्वादश दृश्यताम् । स्त्रीष्वार-
धनं चोपधो बन्धाः, न फलवन्तो जनस्पतयः स्त्रीषा मेधाः क्षीयन्त्येतवः
स्त्रयः पशून्पश्याणि पश्यन्ति, विरहीभूतं कन्दमूलफलं चवहीनाः कथाः,
यस्मिन्नाः कथमाशोच्यक्रियाः, बहुलीभूतानि तस्मिन्कुलानि चान्योन्यमभक्षयन्
प्रजाः पर्युत्थितस्ततो वल्लाकावाहदराणि वरिश्चरः कपासानि पर्युत्थितानि
शुष्काः काकमण्डपः शून्यीभूतानि नगरग्रामादीनि ॥

(b). अपरेषु च प्रातरधीत्याय चाजिनमधिरूपं समुत्क्रियते ताव-
न्मुहुर्मानधवलचामरयुगलः कतिपयेरेव राजपुत्रैः परिवृतो मेरवाचार्यं वि-
तस्मिन् प्रथो ब्रह्मं नमसिः प्रत्ये । अथापि किञ्चिदन्तरं तदीयं मेवाभिमुखं
आपातनमन्यतमं विषयमब्रवीत् । अथापि ह भगवाणस्ते इति । सोऽप्ययत्
अस्य हेमिहृदयोभरेव किञ्चिद्विद्वान्मयास्ते इति ॥

2.—(a). Conjugate the root of प्रतप्ते without the prefix, in the tense in which the verb has been used here; also that of प्रवृत्तिः.

(b). Expound the Samasa of the compounds ह्ययत्तावः and समुद्रयमानधवलचामरमुगलः ॥

(c). Derive सोद्वर्षः

3.—Explain in *utka* form the verses given below—

(a). किंकवेदस्य काव्येन किं कार्यतेन धनुषतः ।

परस्य हृदये लग्नं न दूर्ध्वयति यच्चिरः ॥

(b). तुङ्गात्मनो तुङ्गतराः समर्थाः, मनीषज्ञं ध्वंसयितुं न शीलाः ।

धाराधरा हव धराधराणां, निदाघदालौघहरा न नयः ॥

(c). वाप्रपदीनं वरुणं भवेत् प्रह्वया, विपुलचित्तानां ।

किमुतान्योन्यगुणकथाविक्षय, निबहुभावानाम् ॥

4.—State and define the metre in which the verse (c) is composed

5.—Translate into Sanskrit—

Attentively listen to the duties which I shall describe as those severally of the Brahmanas, the Kshatriyas, the Vaishyas, and the Sudras.

The Brahmanas should make gifts, should worship the gods with sacrifices and should be assiduous in reciting the Vedas. He must ever seek to promote the good of others and do evil to none, for the best riches of the Brahmanas are universal benevolence. The man of the Kshatriya caste should support the Brahmanas. His special sources of maintenance are arms and the protection of the earth. By punishing the bad and cherishing the good, the monarch who maintains order among the four castes secures whatever regions he desires. Brahma gave to the Vaishya the occupation of commerce and agriculture and the feeding of flocks and herds of cattle for his means of livelihood.

Service of the three regenerate castes is the province of the Sudra, and by that he is to subsist or by the profits of trade or the earnings of mechanical labour.

PERSIAN.

1.—Translate into English—

خوارزمی زمان خود که ثبات تو کنیم
توصیف کمال گیرایم تو کنیم
چیزی که ما تپیدستان نیست
جایی که توداده مدای تو کنیم

چون انسان را پیش نمرود و گزین سرچشمه دوازدهم آفرینش قصید عذرت است و
ارایی است که گردی از دانشمندان و قدر ویت شناسان بدوش کتب توافیح و تصور احوال
پند و نیک پرداخته برخه از روزگار خود را در آن کار نهاده اند— و بالجملة تصحیح سیر و
اخبار را دست مطبقه انام حلی اختلاف و اولادهم روانه بهماراست— و چون این سر
گشته عمر نامتکی قاف کرده بهشم حقیقت ملاحظه احوال خود نموده سرگشته ایام
گذشته را برای تکرارهای حالی از مانده مفرکه اندید— و در نقل احوال دیگران بسا باشد
که قاتل را منازر سعدیا تعلیم و احتیاج امتد— اما هر شرح احوال خویش مهال این نیست—
عزاست که بدگر همه از حالات و احوال خود که هر چه باشد بهمار مانده پردازد— و در آن
و مناجات اخبار و اختصار نماید— تا ماری عقل و آرایش عبارت صورت سلال خود بخوانی
نگردد— و دوستدار یادگار و آیدگان را تذکره باشد *

2.—In the above extract—

- (a). Point out all Arabic words and write out their Persian as well as English meanings.
- b). Analyse the top complements.
- (c). Write out the pronunciations of—

ملفوظات—ملاحظه—روانده—تذکره *

- (d). Mention the kind of each final بی and give an example of each.
- (e). Give the roots of the following —

زبان—ثبات—دانشمندان—تپیدستان—انام—اولادهم—روانده—ملاحظه—تذکره *

3.—Translate into Persian—

Among those confined with Joseph were two persons, one a builder and the other a baker of the king's household, who for some offences were cast into prison. These two men had each a remarkable dream, which Joseph interpreted to mean that the butler should be restored to his place in the Court and the baker should be hanged. And the event was according to this interpretation. Two years after this, Pharaoh had a significant dream, and after trying in vain to obtain an interpretation of it from magicians and wisemen of Egypt, he was told of Joseph by the butler. Joseph was immediately sent for, and after hearing the dream interpreted

it to signify the approach of a seven years' famine immediately succeeding the same period of plenty, and, at the same time, he recommended to the king the appointment of a suitable person to make provision for the season of want, by laying by one-fifth of the annual produce of the land during the season of plenty.

ARABIC.

1.—Translate into English—

حكى ابن رجلا اختطفت ملاما فقال له يا مولاي اريد منك ان تكتب لي رسالة واحدة عاين لا تملني من الصلوات اذا دخلت بها والثاني ان تكتب لي رسالة واحدة عاين لا تملني من الصلوات اذا دخلت بها والثالث ان تكتب لي رسالة واحدة عاين لا تملني من الصلوات اذا دخلت بها والرابع ان تكتب لي رسالة واحدة عاين لا تملني من الصلوات اذا دخلت بها والخامس ان تكتب لي رسالة واحدة عاين لا تملني من الصلوات اذا دخلت بها والسادس ان تكتب لي رسالة واحدة عاين لا تملني من الصلوات اذا دخلت بها والسابع ان تكتب لي رسالة واحدة عاين لا تملني من الصلوات اذا دخلت بها والثامن ان تكتب لي رسالة واحدة عاين لا تملني من الصلوات اذا دخلت بها والتاسع ان تكتب لي رسالة واحدة عاين لا تملني من الصلوات اذا دخلت بها والعاشر ان تكتب لي رسالة واحدة عاين لا تملني من الصلوات اذا دخلت بها.

2.—Re-write the above passage with vowel marks as carefully as you can possibly manage.

3.—Mention the changes that the following have undergone, refer them to grammatical rules and cite other examples —

اختطف — اراد — اخترب — ادعى — اعطى — اعطى

4 —Analyse the following after the Arabic fashion —

فقال له مولاه اختبأت العواشب؟

5.—How do the Arabic and the English divisions of the parts of speech differ from each other, and which parts of the latter are included into which parts of the former? Illustrate your answer by examples.

6.—Translate into Arabic and supply your translation with diacritical marks—

Jafar was the third son of Almutalib and thus was a cousin of the Arabian Prophet. He resembled the Prophet most, both in appearance and in manners. He was one of the earliest converts to Islam and was much esteemed by the Prophet. In the forty-first year of his age he was killed in the battle of Mootah, 6 A. H. or 629 A. D. The loss of his cousin, Jafar, affected the Prophet deeply. On the first intelligence

of the death of Jafer, the Prophet proceeded to his house, and calling for his children embraced them tenderly and burst into a flood of tears.

N.B.—Numbers in the above extract must be translated in words and not in figures

PHYSICAL SCIENCE.

1.—What is meant by saying that any given body possesses energy? Distinguish between the two kinds of energy which it is possible for it to possess. The energy of a body being temporarily exhausted, how could you restore it?

2.—A vessel containing pounded ice is placed over a steady source of heat which converts the whole of the ice into steam. A thermometer is kept in the vessel. Will it show a steady rise of temperature throughout the operation? If not, what interruptions to the steady rise will occur, and why?

3.—Describe a prism, and also a lens, and draw diagrams to illustrate the action of each on a beam of light passed through them.

4.—Write down instructions for charging a Grove's battery, giving reasons for whatever precautions are necessary.

5.—Describe an experiment in which two salts which have been thoroughly mixed can be separated out by crystallization. Does the operation ever occur in nature?

6.—Why is it that a piece of coloured cotton rag dipped into a solution of bleaching powder is not bleached, and what further operation is necessary for it to become so?

7.—Account for the existence of mountain ranges on the earth's surface, and for the variety of the rocks of which they are composed.

8.—Explain by the help of a diagram how the inclination of the earth's axis produces the alternations of the seasons, and show what would be the effect of the axis being upright. To what plane is the axis inclined?

PHYSICS AND CHEMISTRY.

1.—Enumerate the chief varieties of energy, and explain clearly the meaning of such terms as—mechanical equivalent of heat, mechanical equivalent of electrical energy, &c., in experiments which demonstrate the principle of the conservation of energy.

2.—Give a clear explanation of the manner in which the column of mercury in a barometer is supported. Why is mercury the liquid generally employed? How is the height of the mercurial column affected—(1) by changes of temperature, (2) by the narrowness of the tube, (3) by the impurity of the mercury, (4) by the degree of freedom from air of the space at the top of the tube?

3.—200 grammes of water at 99°C . are mixed with 200 cub. cm. of milk of density 1.08 at 15°C ., contained in a copper vessel of thermal capacity equal to that of 8 grammes of water, and the temperature of the mixture is 57°C . If all the heat lost by the water is gained by the milk and the copper, what is the specific heat of the milk?

4.—Account for Fraunhofer's lines in the spectrum, and explain how they have developed into a powerful method of analysis.

5.—Draw diagrams illustrating the following types of dynamo machines—(1) separately excited, (2) series wound, (3) shunt wound, (4) compound wound, and state the particular work for which the two latter types are used, showing why they are specially suitable for such work.

6.—What characteristics distinguish chemical force from the other forces of nature, and in what variety of ways does it manifest itself?

7.—Enumerate the allotropic modifications in which sulphur is found to exist, describe its behaviour on being heated, on being allowed to cool, and on being poured into cold water when hot, and mention its chief commercial uses.

8.—Name and give the chemical formulæ of the chief oxy-salts of Potassium, describing their method of preparation and their chief properties.

9.—Explain the following terms—Isomerism, allotropy, a monobasic acid, a haloid salt, fractional distillation, trichloric.

10.—Distinguish between crown-glass and flint-glass. To what is a green tinge in glass due, and how is a colourless glass obtained?

DRAWING.

1.—Construct a plain scale of 15 feet to an inch; draw a line, and on it set off a distance of 83 feet.

2.—Construct a regular hexagon of 1 inch side, reduce it to a

triangle of equal area, and construct a square, with an area equal to one-half of the triangle.

3.—Make a neat exact copy of the following printing —

WEATHER.

Simla, October 28th, 1896.

"The barometer continues to fall."

4.—Find a line that shall have the same ratio to a line 2·7 inches long, that 2·75 has to 1·5 inches.

5.—Construct an ellipse by means of arcs of circles, major axis 3 inches.

6.—Construct an isosceles triangle, with vertical angle 75° and base 4 inches (Find angle without the aid of a protractor).

NOTE.—All answers to be obtained by Geometrical construction. Lines of construction to be left in pencil. No marks given for sketches with theoretical explanation.

HISTORY.

1.—Name the six grand epochs in the history of England from the invasion of Cæsar to the accession of William III.

2.—Who was Prime Minister to Henry VIII? Sketch his career.

3.—Mention the most remarkable events in the reign of Edward III., and state upon what grounds he asserted his claims to the monarchy of France? What law destroyed his claims?

4.—Give short explanations of the following historical terms — "Star Chamber," "Mad Parliament," "Statute of the Six Articles," "Ship Money," "Long Parliament," "Test Act," "Peace of Paris".

5.—What famous battles took place in the reign of George III.? State all you know of them, and mention their separate commanders and the results of each.

6.—When and how did Gibraltar fall into the hands of the English? Describe the siege. What other big war was taking place at the same time?

7.—State what you know of the following:—Bairam Khan, Bayyid and Lodi Dynasties, The Khilji Kings of Delhi.

8.—Who was Akbar and how did he treat the Rajputs? State what you know of his character.

9.—Give a short account of the "Invasion of India by Selenkus," "Bactrian Greeks," "The Empire of Magadha"

10.—Sketch briefly the outlines of Sir John Lawrence's administration.

ARITHMETIC.

1.—Simplify—

$$2 + \frac{\frac{29}{20} - 1\frac{19}{45}}{181 - \frac{915}{74}} - \frac{1}{207} \text{ of } 5\frac{1}{3} \text{ of } 10\frac{7}{10} \text{ of } \frac{2}{15} \text{ of } \frac{1}{18}.$$

2.—(a). Find the value of—

$$\frac{1}{9} \times .47 \text{ of } £360 \text{ 2s. 8d.} + .01 \times .101 \text{ of } £74 \text{ 18s. 6d.}$$

$$(b). \frac{3802083}{16510416} + \frac{6\frac{3}{4} \times 375}{\frac{1}{4} \text{ of } 685461 \text{ of } \frac{1}{2}} + \frac{2772}{1109}.$$

3.—Find, by Practice, the value of—

$$14 \text{ ac } 3 \text{ rs. } 26\frac{3}{4} \text{ per. at } £52 \text{ 7s. 6d. per acre.}$$

4.—If the rent of 25 ac 3 rs. 14 per. be £157 5s. for 1 year and 20 days, of how much land will the rent be £125 18s for 44 days?

5.—A grocer buys $6\frac{1}{2}$ cwt of tea at 17 guineas per cwt. He sells 3 cwt. of it at 8s 3d. a pound, and the rest at 8s. 9 $\frac{1}{2}$ d. a pound; how much does he gain?

6.—What is the amount of a bill due $2\frac{1}{2}$ years hence, if its present worth be £2,350, and the rate of interest be $4\frac{1}{2}$ per cent.?

7.—£2,500 is invested in the 3 per cents. at 88 The stock is afterwards sold at 92, and the money is put out at interest at 4 per cent Find the change in the income.

8.—Find the square root of 1204971684244, and the cube root of 14848907.

9.—A force of police, 1,921 in number, is to be distributed among 4 towns in proportion to the populations, which are respectively 4,150, 12,450, 24,900 and 29,050, how many were allotted to each town?

10.—Two men and 5 boys are employed on a piece of work, and do $\frac{1}{2}$

of it in 6 days. After this, 1 more man, and 1 more boy are put on, and $\frac{1}{3}$ more is done in 3 days, how many more men must be put on that the whole may be finished in 1 day more?

ALGEBRA.

1.—Eliminate x , y , z , from the equations—

$$\frac{y-z}{y+z} = a, \quad \frac{z-x}{z+x} = b, \quad \frac{x-y}{x+y} = c.$$

2.—Solve the equations—

$$(a). \quad \left(\frac{x-a}{x+b}\right)^3 = \frac{x-2a-b}{x+a+2b}.$$

$$(b). \quad \frac{x}{3} + \frac{1}{2x} = \left(\frac{x}{3} + \frac{1}{4}\right)^{\frac{1}{2}} - \frac{1}{2}.$$

$$(c). \quad x^2 + y^2 = 18, \quad 2x - xy + 2y = 4.$$

3.—If α and β be the roots of the equation $\alpha x^2 + bx + c = 0$, form the equation whose roots are $\frac{1}{\alpha}$ and $\frac{1}{\beta}$.

4.—An express train sets off to travel from one station to another with uniform speed; at the end of the first hour an accident occurs which delays it one hour, and reduces its speed in the ratio of 5 : 3. It arrives at the second station three hours behind time. If the accident had occurred 50 miles further on, the train would have arrived $1\frac{1}{2}$ hours sooner. What is the distance apart of the stations?

5.—Solve the following —

$$yx - f^2 = cy + bz.$$

$$zx - g^2 = ax + cz.$$

$$xy - h^2 = bx + ay.$$

6.—Find p and q in terms of a and b , so that $\frac{pa+qb}{p+q}$ may be the Arithmetic mean between p and q , and the Geometric mean between a and b .

7.—There are n things of which p are alike and the rest unlike; find the number of combinations of them taken r at a time.

Find the number of permutations formed out of the letters of the word Mississippi.

8.—The co-efficients of x in the 3rd and 5th terms of $(1-x)^n$ are $\frac{16}{9}$ and $-\frac{7}{243}$ respectively. Find n .

2.—Find the sum of the squares of the co-efficients in the expansion of $(1 + x)^n$, where n is a positive integer.

GEOMETRY.

1.—Define the following terms.—A plane rectilinear angle, a polygon, an oblong, an arc of a circle, a sector of a circle, similar rectilinear figures, altitude of any figure.

2.—In an isosceles triangle ABC the internal angles at the base are equal, and when the sides AB, AC are produced, the external angles at the base are also equal.

3.—To draw a straight line parallel to a given straight line from a given point without it.

4.—The angle at the centre of a circle ACB, is double of the angle ADB, at the circumference, standing on the same arc AB.

5.—To describe a circle about a given triangle ABC.

6.—In a right-angled triangle ABC, if a perpendicular BD be drawn from the right angle to the opposite side, the triangles ADB, ABC, on each side of it, are similar to the whole triangle and to each other.

7.—To erect a straight line at right angles to a given plane from a given point in the plane.

8.—ABC is a circle. Show how to divide it into three equal areas.

9.—AB is a straight line divided into two unequal parts at C, draw any line CD such that the square on CD equals the rectangle AB, BC.

TRIGONOMETRY.

1.—Find the arcs of a circle of diameter 4 feet which subtend at the centre the following angles—(1) $36^\circ 41' 28''$, (2) $5^\circ 37' 22''$, (3) the angle whose circular measure is $2\frac{1}{2}$.

2.—Prove that if the sides a and b of a plane triangle ABC include an angle of 60° , then $\cos(60^\circ - B) = \frac{a+b}{2c}$ and also that if $\sec(\phi + \alpha) + \sec(\phi - \alpha) = 2 \sec \phi$, then $\cos \phi = \sqrt{2} \cos \frac{\alpha}{2}$.

3.—Determine x in the equation—

$$\tan \alpha \tan x = \tan^2(\alpha + x) - \tan^2(\alpha - x).$$

4.—(a). Find the value of $-2 \tan^{-1} \frac{1}{2} + \tan^{-1} \frac{1}{3} + 2 \tan^{-1} \frac{1}{4}$.

(b). Find the sine of the angle expressed by—

$$\cos^{-1} \frac{53}{65} + \tan^{-1} \frac{1}{2}.$$

5.—Given $\log_{10} 5 = .6989700$, find the logarithms to base 10 of 16
 $\cdot 0128$, and $(.064)^{\frac{1}{2}}$

6.—The lengths of the straight lines which join three points A, B, C, are known; at any point P in the same plane as A, B, C, the angles APC, BPC, are observed, show how to find the distance of P from each of the points A, B, C.

7.—From a point between the bases of two equal chimneys, the nearer chimney-top's elevation is 60° . At 80 feet distance horizontally and at right angles to the base line the elevations of the tops are 45° and 30° . Find their distance apart.

8.—Prove that in any triangle, if S be the centre of the circumscribing circle, and O the intersection of the perpendiculars let fall from the angles on the opposite sides, then

$$SO^2 = R^2 (1 - 8 \cos A \cos B \cos C)$$

where R is the radius of the circumscribing circle.

9.—Prove that the area of a triangle is

$$\frac{1}{2} (a^2 \cot A + b^2 \cot B + c^2 \cot C).$$

MENSURATION.

1.—The sides of a pentagon, taken in order, are 100, 180, 187, 188 and 84 feet, and the two diagonals measured from the intersection of the first and last sides are 209 and 198 feet, find the area of the figure.

2.—The base of a prismoidal solid is a square, and the top a regular octagon, four alternate sides of which are parallel to the sides of the base. The altitude of the solid is 6 feet, the sides of the base 8.5 feet, and those of the top 1 foot, find its volume.

3.—A square field contains 81 acres, 0 rods, 10.25 square poles; find the length of a side, and of the diagonal.

4.—The section of a canal is 32 feet wide at the top, 14 feet wide at the bottom, and 8 feet deep; how many cubic yards were excavated in a mile of the canal? Also, if the surface of the water be 26 feet wide, what is its depth?

5.—Find how many gallons are contained in a vessel which is in the form of a right circular cone, the radius of the base being 8 feet, and the slant side 17 feet.

6.—A cubic foot of gold is extended by hammering so as to cover an area of 6 acres. Find the thickness of the gold in decimals of an inch, correct to the first two significant figures.

7.—Find the area of the space which is common to four equal circles which intersect each other, their centres being at the angular points of a square and their radii equal to a side of the square.

8.—A hollow circular cylinder of cast-iron is 81.43 feet in circumference, and 9 feet 9.5 inches in diameter inside, find its thickness, and its weight, if one cubic foot of the iron weigh 441 lbs.

9.—A tent is made in the form of a conic frustum, surmounted by a cone. The diameters of the base and top of the frustum are 14 and 7 feet, its height 8 feet, and the height of the tent 12 feet; find the quantity of canvas required for it.

10.—An octagonal stone prism stands at the foot of a sloping bank of grass which is inclined to the horizon at an angle of 45° ; the line of intersection of the slope with the ground is parallel to one face of the prism, and one foot in advance of it. If the prism be 8 feet high, and 12 feet in perimeter, what proportion of its volume is above the bank?

UPPER SUBORDINATE CLASS.

ARITHMETIC.

1.—Reduce each of the following fractions to its lowest terms.—

$$\frac{42287}{75582}, \frac{7200}{704075}, \frac{7497}{15729}, \text{ and } \frac{890274}{1218441}.$$

2.—Express in the decimal form the following vulgar fractions and mixed numbers :—

$$\frac{1001}{1000000}, \frac{5051}{10000}, 7\frac{364}{1000}, \text{ and } 2457\frac{15}{1000000}$$

3.—Reduce 56 acres, 2 roods, 25 perches, 87 square yards, 5 square feet, 73 square inches to square inches.

4.—Find by Practice the value of 1,842 articles at £2 6s. 9½d each

5.—A person completes a journey of 160 miles in 3 days, travelling 11 hours a day, in how many days would he complete 1,000 miles, going 18 hours a day at the same rate?

6.—For what sum should goods, worth £4,884 0s. 3d, be insured at £2 6s 8d. per cent., that the owner may recover, in case of loss, the value of both goods and premium?

7.—A person buys 50 reams of paper, which he thought to sell at £1 2s 6d per ream, making 8 per cent. profit on the prime cost, but 5 reams being damaged, what did he gain or lose per cent. by selling the remainder at the same rate?

8.—Allowing 44½ guineas to weigh a lb. Troy, and 32 half-pences to weigh a lb. Avoirdupois, and observing that a lb. Avoirdupois contains 7,000 grains Troy, what is the difference in grains between the weights of a guinea and half-penny?

9.—The sum of four fractions is $2\frac{1}{2}$, and one common result is obtained by adding the fraction $\frac{1}{2}$ to the first, subtracting $\frac{1}{2}$ from the second, multiplying the third by $\frac{1}{2}$, and dividing the fourth by $\frac{1}{2}$. Find the four fractions.

10.—What must be the gross rental of an estate, so that, after deducting 7d. in the £ income tax, and 4½ per cent on the remainder for expenses of collecting, there may be left a nett rental of £1,000?

GEOMETRY.

1.—Define—a plane superficies, a trapezium, a scalene triangle, a polygon, a segment.

2.—The angles at the base of an isosceles triangle are equal to one another; and if the equal sides be produced the angles on the other side of the base shall be equal to one another.

3.—To bisect a given finite straight line, that is, to divide it into two equal parts.

4.—Any two angles of a triangle are together less than two right angles.

5.—To make a triangle of which the sides shall be equal to three given straight lines, but any two whatever of these must be greater than the third.

6.—If a straight line be drawn through A, one of the angular points of a square, cutting one of the opposite sides, and meeting the other produced at F, show that AF is greater than the diagonal of the square.

7.—If a side of any triangle be produced, the exterior angle is equal to the two interior and opposite angles, and the three interior angles of every triangle are together equal to two right angles.

8.—To describe a parallelogram that shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

9.—The complements of the parallelograms which are about the diameter of any parallelogram, are equal to one another.

10.—Bisect a given triangle by a straight line drawn through a given point in a side.

MENSURATION.

1.—A sphere is 80 feet in diameter, find what fraction of the whole surface will be visible to an eye placed at a distance of 41 feet from the centre.

2.—The three sides of a triangle were 800, 500 and 1,237 links. By some mistake the third side was put down as 500 instead of 1,237. What error would that mistake occasion in the computed area?

3.—The radius of the base of a segment of a sphere is 1 inch, and the radius of the sphere is $2\frac{1}{2}$ inches. find the volume of the segment.

4.—Two men, A and B, purchase a grindstone, 80 inches in diameter, for Rs. 12, of which A pays Rs. 7 and B Rs. 5; now supposing the innermost 10 inches of the diameter as useless, what part of the radius may A grind down before sending the grindstone to B?

5.—The diameters of the ends of a frustum of a cone are respectively 30 feet and 16 feet, and the height of the frustum is 5 feet, the frustum is divided into two equal parts by a plane parallel to the ends: find the distance of the plane from the smaller end.

6.—A solid is composed of a cone and a hemisphere on opposite sides of the same circular base, the diameter of which is 2 feet, and the vertical angle of the cone is a right angle: the solid is immersed in a cylinder full of water, whose circular section also has a diameter of 2 feet, so that the vertex of the cone rests on the centre of the cylindrical base, while the highest part of the hemisphere just coincides with the surface of the water: find the quantity of water remaining in the cylinder.

7.—The edge of a wedge is 25 inches; the length of the base is 22 inches; a section of the wedge made by a plane perpendicular to the edge is an equilateral triangle, each side of which is 10 inches: find the volume.

8.—The chord of half an arc is 2 feet 6 inches, and the diameter of the circle is 4 feet 2 inches: find the chord of the arc.

9.—A pond whose area is 4 acres is frozen over with ice to the uniform thickness of 6 inches: if a cubic foot of ice weighs 898 ounces Avoirdupois: find the weight of ice on the pond in tons.

10.—If 80 cubic inches of gunpowder weigh 1 lb.: find the diameter of a hollow sphere which will hold 11 lbs.

WRITING AND DICTATION.

The officer conducting the Examination is requested to read out the accompanying passage once, and then dictate it to the Candidates at the rate of about a line a minute, having previously warned them that spelling and punctuation will be judged from the Dictation exercise. After the Dictation is concluded, Candidates may be allowed 5 minutes to correct their Exercise, which should then be collected.

The printed paper should then be given to the Candidates that they may copy as much as they can of the passage in 10 minutes in their best style, as a separate test of the rapidity and clearness of their writing, at the expiry of which time the papers should be collected whether the passage has been wholly copied or not.

The great and good philosopher Faraday communicated the following piece of admirable advice, full of practical wisdom, the result of a rich experience of life, in a letter to his friend Professor Tyndall:—"Let me, as an old man, who ought by this time to have profited by experience, say that when I was younger I found I often misrepresented the intentions of people, and that they did not mean what at the time I supposed they meant, and further, that, as a general rule, it was better to be a little dull of apprehension where phrases seemed to imply pique, and quick in perception when, on the contrary, they seemed to imply kindly feeling. The real truth never fails ultimately to appear; and opposing parties, if wrong, are sooner convinced when replied to forbearingly, than when overwhelmed. All I mean to say is, that it is better to be blind to the results of partisanship, and quick to see goodwill. One has more happiness in one's self in endeavouring to follow the things that make for peace. You can hardly imagine how often I have been heated in private when opposed, as I have thought unjustly and superciliously, and yet I have striven, and succeeded, I hope, in keeping down replies of the like kind. And I know I have never lost by it."

DRAWING.

Notes—In working the examples the lines of construction are to be dotted in.

1.—Construct a diagonal scale of 10 feet to the inch to read to inches. Mark off, by means of a thick line, a length of 24 feet 5 inches. Give the representative fraction.

2.—Print the word "Section" in plain block print, $\frac{1}{4}$ inch high; and the following sentence in Italics, $\frac{1}{8}$ inch high —

"Variation from the true North."

3.—Inscribe a pentagon in a circle whose diameter is $8\frac{1}{2}$ inches.

4.—Draw arcs of 70° and 180° , with radii of 1.5 and 2 inches respectively, and a third arc, radius 4 inches, to touch the first two arcs: mark the point of contact.

5.—Construct the ellipse whose diameters are 4 and $2\frac{1}{2}$ inches.

6.—Construct a triangle equal in area to a regular heptagon whose side equals 1.85 inches.

HINDUSTANI.

Note.—In writing Hindustani words, the Persian character is to be employed ; otherwise half the marks will be deducted.

1.—Translate into English—

(a). اُسکے اُس عبارتہ نے مجھے دل میں یہ اور بیکاری دیا ہے کہ جس طرح وہ
 اُسکی باتوں سے بھی حد اُٹھائے اس تمنا سے حیرت و حوش کی طرح اُسکے منہ
 کی طرف میری نکالنے کی بات گئی اور اُسکے بھی میری سختی دیکھ کر ہاتھ سے
 مچھوکر بلیا۔ میں نہایت ادب و تعظیم سے اُسکے پاس گیا۔ اور چونکہ میں عالمِ وجد
 میں پہلے ہی سے تھا یہاں تک کہ اُسکے باتوں پر کر پڑا اور نلک نلک کر زار زار رونے لگا
 اِس صبری بیکاری پر وہ جن اِس وقت سے سکویا نہ میرے دل میں جو اُسکے
 جس عرصے کی دھشت اور اُسکے چال سے دھشت تھی وہ ایک آن میں صحت و
 رحمت سے بدل گئی پھر اُسکے مچھوے اپنے باتوں پر سے اُٹھا کر بیدار کر دیا اور میرا
 بازو پکڑ کر کہنے لگا کہ یار مرزا تو جو ابھی اپنی دانست میں ایسا تھا تو سو مگر رہا
 تھا وہ میں نے سب سنی اب دُعا میرے پیچھے ہوئے۔ اُس مقام سے قریب ایک اور
 ٹھکانا تھا اور یہ مقام سب سے زیادہ ننگ تھا مچھوکر الجھا کر اُس پر کودا اور پورے
 چورب کے طرف دیکھ کر جو کچھ دیکھ کر پڑے مچھوے یہاں کر۔ میں کیا دیکھتا
 ہوں کہ سامنے ایک عجیب عورت کی تصویر چھپا کر رکھی تھی اور اُس کی طرف سے ہوا
 سیل کی صورت میں رہا ہے۔ جس کو کہنے لگا یہ لکھتے جو تو دیکھ رہا ہے یہی ہم
 کی کہانی ہے اور یہ سیل جو اِس میں بہتی نظر آتی ہے یہ ازل اور ابد کے بے انتہا
 زمانے کا ایک حصہ ہے ۔

(b). باوجود اُسکے عہدِ بادشاہ نہایت سیدھا سادہ رہتا تھا اکثر قصص کے لکھی
 دیکھ کر اور کہی کہتا کرتا اپنی رحمت کا انصاف کیا کرتا تعریف اُسکے ایک مزاجی
 کی باتوں سے حاضر ہے ایک دُعا کا ذکر ہے کہ سرای میں کسی شخص نے اکثر پڑا ایک
 تیر چالیا اور وہ تیر بادشاہ کے شانے پر لگا مچھوے پکڑا گیا لوگوں نے عرض کیا کہ جلتا
 مانتی ابھی یہ تنگ نہ ہونے پادشہ کا اصل مچھوے کا نام و نشان اِس سے دریافت ہو
 جائے دیکھا کہ اِس دُعا کے سے کوئی اور دیکھا نہ پھنس جائے اور اُس مچھوے کے
 لئے فرما حکم انصاف دیا ۔

ایک مرتبہ اکثر کوئی میں حالے نے واسطے پڑھا کہ میں رہا تھا کہ اتر میں دیکھا
 کہ کسی راجہ کا ایک اپنے کھل کرلے سے ایسا دھاری زرہ بگتر ہوئے ہوئے ساتھ چلے کر
 طیار ہے کہ جسکے ہرچہ سے دنا جاتا ہے بادشاہ نے اُسکی عمر کے مطابق ایک ہفتی
 سی زرہ پکڑا اپنے کھلے خانے سے منگوائی اور جب اُسکے وہ دُعا اپنے نص سے اختیار
 ایک دُعا کے طرف جو اُس وقت نے زرہ نکلتا تھا پھرتے کر عبارت کیا ادا کیا یہ
 راجا اُس کو نے باپ سے کچھ دھمکی دیکھا تھا اس واسطے کہ نہ کو بہت ناکارہ کرتا
 اکثر ہی میں دُعا زرہ پکڑ کر اُس کو اختیار کر پھٹک ہی اور کہا کہ میں کوئی میں نے

زرہ نکتو کے چہ چلوں گا اس کو دے آسکی ہے اسی سے چھوڑ دھی کر کے صرف اتنا ہی فرما یا
کہ غیر آج ہم بھی زرہ نکتو کو بھی پہنچانے کا رنگہ یہ زہا بھی کہ سردار ہمارے ساتھ
ہے زرہ نکتو چلیں اور ہم زرہ نکتو پہنچیں *

2.—Decline in singular and plural the noun ارشد (a camel).

3.—Translate into Hindustani the following sentences —

(a). Shall we come again in the morning?

(b). Is this road to be made flat like those we have just finished making?

(c). Cut down this edge to a depth of 6 inches.

(d). I hope I shall see this work all right to-morrow morning.

(e). Well, come in the morning and bring two men with you.

4.—Conjugate بنا (to make) in the three principal tenses, and give present and past participles of بنا (to be made).

5.—Write out in Urdu words and figures—8, 17, 325, 3274 and $\frac{1}{2}$.

6.—Translate into Hindustani—

The air is seldom or never at rest. Every boy who flies a kite knows that even when it seems quite calm at the surface of the ground there is generally a light breeze above the tops of the trees and houses. On the plains of the interior of India there is always more or less wind in the day-time, though it is usually very light in the months of November and December, but at night, except in the rainy season, it is generally calm even at the level of the roofs of high houses

ENTRANCE EXAMINATION PAPERS,

1996.

SUPERIOR ACCOUNTS BRANCH AND TRAFFIC DEPARTMENT.

ENGLISH LITERATURE.

1.—Compare the styles of Addison and Macaulay. What do you know of the life of the former? What are his chief works?

2.—Who wrote the Idylls of the King? How many are there? Give a short account of the story of any two of them.

3.—From what works are the following quotations taken? Give context where you can —

- (1). "Fare thee well! and if for ever
"Still for ever, fare thee well."
- (2). "Butchered to make a Roman holiday."
- (3). "Unfaith in aught is want of faith in all"
- (4). "Who steals my purse steals trash"
- (5). "They also serve who only stand and wait"
- (6). "She sat like patience on a monument."
- (7). "A gentle Knight was pricking o'er the plain"

4.—What was the effect of the Restoration on the poetry of the time? Illustrate your answer by quotations where possible.

5.—Who were the authors of—

- (1). The Phoenix and the Turtle
- (2). The Light of Asia.
- (3). The Dunciad
- (4). The Spanish Student.
- (5). The Crown of Wild Olive
- (6). Tales of an African Farm.
- (7). Utopia.
- (8). The Spectator.

(8). In Memoriam.

(16). The Dream of Fair Women.

Describe shortly the contents of any two of numbers 2, 4, 5, 6 or 9.

6.—In what books do the following persons occur? Discuss the character of any *one* of the 1st and last 5.—

Pip

Capt Dobbin.

Andrew Fairweather

Cedric

Sancho Panza.

Jeanie Deans

Nydia.

Amy Robsart

7.—What do you know of Walt Whitman? What are the peculiar characteristics of his works?

FRENCH.

1.—Translate into English—

Pierre le Grand était bon ingénieur lui-même, mais sur-tout il excellait dans tous les arts de la marine bon capitaine de vaisseau, habile pilote, bon matelot, adroit charpentier, et d'autant plus estimable dans ces arts, qu'il était né avec une crainte extrême de l'eau Il ne pouvant dans sa jeunesse passer sur un pont sans trembler, il faisait fermer alors les volets de bois de son carrosse, le courage et le genre d'empêchement en lui cette faiblesse machinale. Il fit construire un beau port exprès d'Asoph, à l'embouchure de l'Araxe : il voulait s'entreprendre des galères, et dans la suite, croyant que ces vaisseaux, longs, plats et légers, devaient réussir dans la mer Baltique, il en a fait construire plus de trois cents dans sa ville favorite de Pétersbourg il a montré à ses sujets l'art de les bâtir avec du simple sapin, et celui de les conduire. Il avait appris jusqu'à la chirurgie on l'a vu dans un besoin faire la ponction à un hydropique; il réussissait dans les mécaniques, et instruisait les artisans

Les finances du czar étaient à la vérité peu de chose, par rapport à l'immensité de ses états il n'a jamais eu vingt-quatre millions de revenu, à compter le marc à près de cinquante livres, comme nous faisons

aujourd'hui, et comme nous ne ferons peut-être pas demain : mais c'est être très riche chez soi que de pouvoir faire de grandes choses. Ce n'est pas la rareté de l'argent, mais celle des hommes et des talents qui rend un empire faible.

2.—Translate into French—

Charles XII. was aware that he had now taught the art of war to his enemies. Towards the month of April, he found that his whole Swedish Army, who had survived through the coldest winter in the Ukraine, was but eighteen thousand men, and the sole ally who remained true to him was Mazepa, who had brought a body of Cossacks, which raised the force of the king to thirty thousand men. Towards the end of May he passed the Dnieper, and determined to invest Pultowa, a considerable town on the river Vorskla. Prince Menschikoff, who commanded the Russian army opposed to Charles, threw reinforcements into the town, and the garrison made sorties, sprang mines, and defended themselves according to rule, but on the 27th of June, the Czar himself advanced to its relief with an army of 70,000 combatants. The King attacked one of their detachments, and when returning to his camp, received so severe a wound in the heel, that it was feared he must lose his leg; but a bold surgeon assured he could save it by making incisions. With characteristic endurance, he ordered the doctor to proceed at once to his task, and holding his own leg said, "Cut away, cut boldly, don't be afraid." Unable from his wound to command his army, he ordered Reinschuld to attack the Czar on the 8th of July. The Czar had crossed the river a league from Pultowa, and formed his camp behind seven redoubts mounted with cannon.

3.—Correct and put into grammatical French—

Enfin l'orient se colore, et le tempête semble s'apaiser aux premières rayons de l'aurore. Le jour naissant découvre à Tell les roches voisines d'Alt Dorf, avant que le tyran eût le temps de les reconnaître, Guillaume y dirige son barque et la faire marcher plus rapide. Geeler, dont férocité revient à la mesure que le danger s'éloigne, observe lui avec des yeux sombres. Il vouloit, mais il n'ose pas encore le faire chargé de liens. Ses soldats et ses matelots reconnaissent bientôt où ils sont, en instruisent le gouverneur, qui, s'avancant vers Tell avec colère, lui demande d'une voix terrible, pourquoi la barque, qu'il a guidée a reprise le chemin d'Alt Dorf.

4.—Translate into French—

That I may rejoice.

It is cold.

He went away.

It lightens.

I was born.

5.—Give the feminine form of the following words.—

(a) Sec, Fraus, Mou, Malin, Gress, Complet, Favori.

(b) Pêcheur, loup, héros, époux, empereur, serviteur.

6.—Translate the following phrases.—

La fin couronne l'œuvre.

On n'a rien sans peine.

L'oubli est la mère de tous les vices.

Il faut battre le fer quand il est chaud.

Faire d'une pierre deux coups

Il vaut mieux tard que jamais.

7.—Give the adverbs of the following adjectives.—

Constant, prudent, patient, profond, commun, impani, énorme, exprès.

GERMAN.

[NB—At least one answer should be written in German character].

1.—Translate into English—

Erwäm't und gestarkt begaben wir uns nach einiger Zeit wieder in das Freie, um den Anbruch des Tages und den Aufgang der Sonne zu erwarten. Es dauerte nicht lange, so zeigte sich am östlichen Horizonte ein rosenfarbiger Schimmer, der immer glänzender wurde und sich nach und nach über den ganzen Himmelskreis und über Land und Meer verbreitete, die aus der entweichenden Dunkelheit hervortraten. Endlich erschien die Sonne, zerstreute die Nebel am Fusse des Berges und erhellte die umliegenden Landschaften, die nun mit den schönsten und mannigfaltigsten Farben prangten.

Nachdem wir uns an diesem schönen Anblick ergötzt hatten, machten wir Anstalt, den Krater in Augenschein zu nehmen. Wir mussten eine Zeit lang durch tiefen Schnee waten und über Eis und Lavablocke

klettern, bevor der oberste grosse Aufsatz des Aetna erreicht wurde, ein gegen 1,100 Fuss hoher Kegel, der aus lauter Schlacken und Asche besteht und an vielen Stellen ganz heiss und voll Spalten ist, aus welchen Rauch und Schwefeldampf hervorbringt. Der Weg hinauf fiel uns sehr beschwerlich, denn er ist steil, und zuweilen brachen die Füsse durch die mürbe Decke. Aber wie gross war unser Erstaunen, als wir auf dem Gipfel anlangten und den fürchterlichen Krater erblickten, aus welchem ungeheure Rauchsäulen emporstiegen und ein beäufendes Getöse, bald wie Donner, bald wie Kanonenschüsse, herauf schallte.

2.—Translate into German—

The little German theatre in Reval proves a most agreeable diversion. We engaged a box for the season, and are glad whenever the many hospitable houses have an evening free. Without attempting too much, the modest German company, most respectable in performance, gave us selections from Kotzebue, from Iffland, &c, but a piece, recently dramatised, called *Griseldis*, is more attractive than all, and draws most sympathising audiences. This is taken from the same old German legend, which, I conclude, furnished our ancient ballad of the patient *Griselda*, with a slight alteration of the denouement (*Entwicklung*). The drama, however, is laid in the times of our national character King Arthur. The hero, Percival, is one of the chief nobles of his court, and the heroine, *Griseldis*, has on account of her beauty and virtue, been taken from a lowly woodman's hut to grace his castle. Knowing his wife to be the very mirror of excellence, Percival leaves her to repair to King Arthur's court, where, taunted by some with her low birth, by others, with possessing a diamond which he is afraid to display, he boasts that, though his wife be a woodman's daughter, she surpasses in obedience, and every wisely sense of duty, all the high-born ladies of the court. This so stings the Queen herself,—a bad, designing woman,—that she offers to do homage to this peasant-born countess, and to proclaim her best among women, if her obedience prove superior to every trial, but, if *Griseldis* fail, exacts the same homage from the haughty Percival to herself. This rouses Percival's vanity, and confident of his wife's principles, and careless of her sufferings, he accepts the gage.

3.—Give the German words—in the Nominative and Genitive singular,

and Nominative plural with the definite article—of any eight of the following :—

Battle, fool, sword, mountain, war, lady, gentleman, bridegroom, widow, poet, book, poem.

4.—Distinguish between—

Gebetet, gebeten, geboten.

die Ahre, die Ehre,

furchtbar, furchtsam

graulich, greulich

verständlich, verstandlich

es hat nicht lange geregnet, es hat lange nicht geregnet.

5.—Give the German words for—

$\frac{3}{4}$, $\frac{4}{5}$, $1\frac{1}{2}$, $6 \times 6 = 36$, on the first of March 1895.

6.—Conjugate the following verbs —

Lesen, Verstehen and Schlafen in the Present, Past and Future tenses, both singular and plural, also giving their meanings.

7.—Compare (with meanings) —

Stark, gut, nahe, kurz, edel, hoch, gross, viel, gern.

GEOGRAPHY

1.—To what countries do the following belong?— Heligoland, Bornholm, Texel, Ushant, Crete, Cyprus, Corfu, Majorca, Rhodes, Corea, Formosa?

2.—Give an outline map from Riga to Ushant, showing the junctions of the countries, the principal capes, the mouths of the rivers, and the large towns.

3.—Describe the position of Alsace and Lorraine, giving the countries bordering them, the mountains, rivers and chief towns.

4.—A railway may be constructed joining Suez and Agra direct, and the head of the Persian gulf. Describe its course, and give the countries and towns it would pass, and its approximate length.

5.—Trace the course of the Ganges from its source to its mouth, giving positions of its affluents, and any points of interest which may occur to you.

6.—Between what degrees of latitude does the great Himalayan watershed extend? What countries does it divide?

7.—Give the boundaries of the Russian Empire in Asia.

8.—Give, in order, the names of the chief rivers of the Punjab, their sources, and their discharges.

9.—Describe the great plain of Hindustan, giving approximately its area, population, physical features and products, and contrast the climate of Ondh and Bengal.

10.—State what you know of the cause and action of the monsoons, and specify their effect as regards the table-land of the Deccan.

11.—Where are the following.—The Sunderbunds, the Neilgherry hills, the Nerbudda, Goa, Pondicherry, the Andaman isles, Thayetmyo, Outeh, Chittagong, the Godavery, Perak, Tonkin, Baghdat?

12.—Define the following terms.—Watershed, affluent, delta, peninsula, plateau, confluence, lagoon, dune, meridian, isthmus, straits, reef, gulf, estuary, igneous rock, cyclone.

ENGLISH ESSAY,	} <i>Same Examination papers as for Engineer Class Entrance.</i>
LATIN,	...	...	...
PERSIAN,	...	...	...
ENGLISH AND INDIAN HISTORY,	...	...	...
ARITHMETIC,	...	...	...
ALGEBRA,	...	...	...
GEOMETRY,	...	...	...
TRIGONOMETRY,	}
MENSURATION,	...	...	...

MONTHLY EXAMINATION PAPERS,

1898-97

ENGINEER CLASS.

MECHANICS AND CONIC SECTIONS

MECHANICS, PART I.—JUNE

(First Year)

1.—A train, of mass 100 tons, is ascending uniformly an incline of 1 in 280, and the resistance due to friction, &c., is equal to 16 lbs. per ton, if the engine be of 200 H.-P., and be working at full power, find the rate at which the train is going.

2.—A bullet moving at the rate of 200 feet per second is fired into a trunk of wood, into which it penetrates 9 inches; if a bullet moving with a similar velocity were fired into a similar piece of wood 5 inches thick, with what velocity would it emerge, supposing the resistance to be uniform?

3.—A mass P after falling freely through a distance of a feet begins to raise a mass Q , greater than itself, being connected with it by means of a fine string passing over a smooth pulley. Find the resulting motion.

4.—A piece of uniform wire is bent into three sides of the square $ABCD$, of which the side AD is wanting. Show that if it be hung, in the same plane, by the two points A and B successively, the angle between the two positions of BC is $\tan^{-1} 18$.

5.—If a string $ACDB$ be 21 inches long, C and D two points in it such that $AC = 6$, $CD = 7$, and if the extremities A and B be fastened to two points in the same horizontal line at a distance of 14 inches from one another, what must be the ratio of two weights, which hung at C and D , will keep CD horizontal?

inclined at an angle of 45° the co-efficients of friction of the wall and of the horizontal plane being respectively $\frac{1}{2}$ and $\frac{1}{3}$, and the centre of gravity of the ladder being at its middle round. A man, whose weight equals half the weight of the ladder, ascends it, find to what height he will go before the ladder begins to slide.

6.—A particle, after sliding from rest for $\frac{4}{\sqrt{3}}$ seconds down a smooth plane inclined at 60° to the horizon, strikes a horizontal plane (co-efficient of restitution $\frac{1}{2}$) and rebounds. At what distance will it again strike this plane?

7.—In a conical pendulum a mass of m lbs is suspended from a string of length l feet, and makes one revolution in T seconds. Find the inclination of the string to the vertical, and the tension of the string.

Find the inclination when the length of string is 4 feet 1 inch at a place where $g = 32.0166$, and the bob makes 63 revolutions in 100 seconds ($\pi = \frac{22}{7}$).

8.—A seconds pendulum is lengthened 1 per cent. How much does it lose per day?

GEOMETRICAL CONIC SECTIONS.—NOVEMBER.

(First Year).

1.—In a parabola, if the tangent at any point P intersect the tangent at the vertex in Y , then SY will bisect PT at right angles, and will be a mean proportional between SA and SP .

2.—In a parabola if SE be the perpendicular from the focus on the normal at P , and N be the foot of the ordinate, show that

$$SE' = AN \quad SP.$$

3.—If BC be the semi-axis minor of an ellipse, then $BC^2 = CA^2 - CS^2$, and if SL be the semi-latus rectum, then $SL \cdot AC = BC^2$.

4.— PSP' is any focal chord of an ellipse, of which A is one extremity of the major axis, produce PA and $P'A$ to meet the directrix in Q and Q' ; prove that the angle QSQ' is a right angle.

5.—Find the locus of a point which moves so that its shortest distance from a given circle is equal to its distance from a given straight line.

6.—Show how to cut an ellipse from a right cone, determining the position of both foci and of both directrices.

HYDRO-MECHANICS.—JANUARY.

(First Year).

1.—A cube of lead, the side of which is 4 inches, is to be supported in water by being suspended from the smallest possible sphere of cork. What must be the diameter of the latter, the specific gravity of cork being 0.24, and that of lead 11.85.

2.—Describe the action of the lifting pump, and of Hawksbee's air pump.

3.—A solid displaces $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ of its volume respectively when floating in three different fluids. Find the volume it will displace when floating in a mixture made up of equal weights of the same three fluids, supposing there be no loss by chemical action.

4.—A rectangular surface $8' \times 12'$ is immersed vertically in water, with its top level with the surface of the water. Length of vertical side 12 feet.

(i). Divide it, by means of horizontal lines, into 5 rectangles sustaining equal pressures.

(ii). Find the total pressure on one side of one of these rectangles.

(iii). Find the centre of pressure of each of the rectangles.

5.—A pipe laid from a service reservoir A is required to give a discharge of 1,125 gallons per minute at a point C.

Reduced Levels, A, 85.9

" B, 42.4

" C, 31.9

Length, A to B, 4,500 feet.

" B to C, 2,200 "

(i). What diameter should be given to the pipe?

(ii). What would be the pressure in the pipe at B, when the pipe is discharging freely at C, and when it is stopped by a plug?

HIGHER PURE MATHEMATICS.

CO-ORDINATE GEOMETRY.—MAY

(Second Year).

1.—Show that the three lines $5x + 3y - 7 = 0$, $8x - 4y - 10 = 0$, and $x + 2y = 0$ meet in a point, and find in what ratio the line joining the points (1, 2) and (5, 6) is cut by the line joining (2, 5) and (4, 1).

2.—Find the equations to the straight lines which pass through a given point, and make a given angle with a given straight line, and apply your result to the case in which $(5, -8)$ is the given point, $3x + 4y - 6 = 0$ the given straight line, and 30° the given angle.

3.—Find the equation of the circle which touches the lines $x = 0$, $x = a$, and $3x + 4y + 5a = 0$.

4.—Find the equations to the tangent and the normal at any point of a parabola, and deduce their expressions in terms of the tangent of the angle which they each make with the axis of the curve.

5.—At the point (x', y') of a parabola a normal is drawn; find the co-ordinates of the point where the normal meets the curve again, and the length of the intercepted chord.

6.—Given the co-ordinates of one extremity of a diameter of an ellipse, find those of either extremity of the conjugate diameter, and show that the sum of the squares of two conjugate semi-diameters is constant.

7.—P is a point on an ellipse, y its ordinate; show that the tangent of the angle between the focal distance and the tangent at P is $\frac{b^2}{a^2y}$.

DIFFERENTIAL CALCULUS—JULY.

(Second Year).

1.—Find from first principles the differential co-efficient of $\sqrt{a^2 - x^2}$, and point out its geometrical application.

2.—Differentiate the following —

$$y = \tan^{-1} \frac{\sqrt{x} - x}{1 + x^{\frac{3}{2}}}, \quad y = \log \frac{x}{x^2}$$

$$y = x \log \frac{x}{x + \sqrt{x}}, \quad y = \sqrt{\left\{ \frac{1 - x^2}{(1 + x^2)^2} \right\}}.$$

3.—If

$$u = \frac{1}{2} \log \frac{(y+1)^2}{y^2 - y + 1} - \frac{1}{\sqrt{3}} \tan^{-1} \frac{2y-1}{\sqrt{3}},$$

where $y = \frac{\sqrt{1+3x+3x^2}}{x}$, show that $\frac{du}{dx} = \frac{1}{xy(1+x)}$.

4.—Find the first four terms of the expansion of $\log(1 + \sin x)$ which do not vanish.

5.—Find the position of the plane down which the earth behind a retaining wall must slide in order to produce the maximum horizontal earth thrust.

6.—Show that in an earthen water-channel of maximum discharge the hydraulic mean depth should be equal to half the depth of the channel. Take the side slopes to be given as n .

7.—Show that the radius of curvature of the curve $y^2 = \frac{ax(x-2a)}{a-4x}$ at one of the points where $y = 0$ is $\frac{8a}{3}$, and at the other $\frac{2a}{3}$.

8.—In tracing a curve how would you recognise the following features —

- (a). Symmetry, with regard to either or both axes.
- (b). Where the curve crosses the axes.
- (c). Asymptotes.
- (d). Whether the curve passes through the origin.
- (e). The direction of tangents at the origin,

and what would be indicated by $\frac{dy}{dx}$ either vanishing or becoming infinite?

INTEGRAL CALCULUS.—August.

(Second Year).

1.—Explain the method of application of the Integral Calculus to the following problems:—

- (i). Finding the position of the centre of pressure of a uniformly varying stress acting over a given area.
- (ii). Finding the moment of inertia of a beam of rectangular section about an axis parallel to one of its sides.
- (iii). Finding the hydraulic discharge of a rectangular notch of given dimensions.

2.—Integrate the following:—

$$\int e^x \sin ax \, dx, \quad \int \sqrt{2ax - x^2} \, dx, \quad \int_0^{\frac{\pi}{2}} \sin^3 \theta \cos^3 \theta \, d\theta.$$

$$\int_0^{2a} x^2 \sqrt{2ax - x^2} \, dx, \quad \int \frac{(2x+5) \, dx}{x^2 + x^2 - 2x}.$$

3.—The equation to the cycloid referred to the vertex as origin being

$$\left. \begin{aligned} y &= a(\theta + \sin \theta) \\ x &= a(1 - \cos \theta) \end{aligned} \right\}$$

show that the length of the semi-cycloid is twice the diameter of the generating circle.

4.—A circle of which the diameter AB is 12 inches long is divided into two segments by a chord CD cutting AB at right angles in E, distant 8 inches from A. Find the volume generated by the revolution of the larger segment about AE.

5.—Find the centre of gravity of the above segment of the sphere.

6.—Find the whole area of the curve

$$a^2 y^2 + b^2 x^2 = a^2 b^2 x^2.$$

APPLIED MECHANICS.

TRANSVERSE STRAIN.—MAY.

(Second Year).

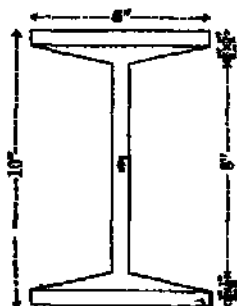
1.—The section of a beam under transverse strain is two equal opposed isosceles triangles with vertices at the neutral axis and bases horizontal, the breadth is 9 inches and total depth 12 inches. Find the following quantities and express them in proper units, the stress intensity of the extreme fibres being 1,750 lbs per square inch:—

- (i). Stress intensity at 1 inch from neutral axis.
- (ii). Total longitudinal stresses.
- (iii). Distance of centres of stress from neutral axis.
- (iv). Effective depth.
- (v). Moment of Resistance.

2.—A rolled iron beam of the section shown below is of 25 feet span.

Find the uniform dead load which it will bear permanently

$$s. = 5\frac{1}{2} \text{ tons per square inch.}$$



3.—A Warren girder of 90 feet span, having in the lower flange 6 bays of 15 feet each, and in the upper 5 bays of the same width each, is 7 feet 6 inches deep, and thus forms a series of right-angled triangles. It is supported at the ends of the lower flange and carries a dead load of $\frac{1}{2}$ ton per foot run distributed equally along both booms, and a live load of 2 tons per foot run along the

bottom beams only. Find the stresses in the booms and in the sloping brace in the bay to the right of the centre of the girder. Find also within what limits there is a change of shear during the passage of the live load

4.—Explain the method of design of the purlins of a roof.

5.—In what ways may a joint made as a pin connection fail? Design the eye and pin of the brace referred to in Question 3, given—

Safe shearing stress,	..	7	tons per sq. in.
„ bearing „	..	6½	„ „
„ tensile „	..	7	„ „

6.—Two flat bars of wrought-iron, each 8 inches wide by ½ inch thick, are lap-jointed by a single rivet 1 inch in diameter. If the centre of the rivet be 1½ inches from the end of each bar, find the least tensile force necessary to cause the joint to fail in any way.

STABILITY OF STRUCTURES.—JULY

(Second Year)

1.—In a blockwork structure 2 feet thick a joint AB has to sustain a resultant pressure of 8 tons making an angle of 15° with the normal to the joint. Find the maximum and minimum pressures exerted on the joint according as the centre of pressure acts at 4", 8", 12", 16" and 18" respectively from the left hand edge, considering (1), that the joint is cemented, and (2) uncemented. Consider the 8 tons to be acting on a 1 foot length of the structure.

2.—Under what circumstances would the above joint be safe against sliding?

3.—Examine into the stability of the retaining wall of which the section is given to you. The tank which the wall retains is liable to be filled to a depth of 12 feet, and is also liable to be completely emptied. Find the maximum pressure which the brickwork has to stand both when the tank is full and when empty, also the pressure on the earth below the foundations. The ground outside the tank is level.

Draw the force diagram at a scale of 4,000 lbs. to 1 inch.

4.—Draw the line of resistance of the loaded half of the arch ring given, when the load per foot run of width of bridge is as shown, and find the amount and direction of the pressure on the earth below the foundations.

Divide the arch ring into 8 voussoirs of 1 foot each from the left abutment, and point out whether there is any danger of sliding at any joint. Weight of brickwork as in question 3. Line of resistance to lie within the centre half of arch ring.

DIRECT STRESS.—DECEMBER.

(First Year).

1.—Define the following terms as used in the Text-book :—Modulus of tenacity, Modulus of elasticity, Pillar, Stress-solid, Stress-diagram, Proof Load.

2.—Show clearly how a pillar is weakened by being unevenly loaded, and state in what ratio it is weakened ?

3.—In what respects are Gordon's formulae for the strength of pillars preferable to those of Hodgkinson and Rendelet, and to what classes of pillars do they apply ?

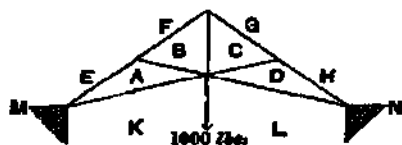
4.—Find the safe working load on a square timber pillar 10 feet long by 6" \times 6" scantling if used—

(i). As a verandah post, with both ends fixed.

(ii) As a pile imbedded 7 feet in firm wet soil which supports it all round, so that the sunken portion is not free to bend.

Safe crushing stress, 1,000 lbs. per square inch.

5.—A symmetrical King-post Truss of 32 feet span, has the rafters



bisected by the struts, and the ties braced up so as to be in one line with the struts as shown in diagram. The trusses are 6 feet 8 inches apart, inclination of rafters $\tan^{-1} \frac{4}{3}$. The

vertical load of roofing is 50 lbs. per square foot, and there is a vertical load of 1,000 lbs. hanging from the tie-rod joint. A wind pressure of 35 lbs. per square foot blows from the right.

Find the resulting stresses in the braces by a single diagram lettered according to Bow's method, in which the resultant loads at each joint are laid off along the load line, and tabulate the nature and amount of the stress in each bar.

Scale for frame-diagram, ... 8 feet to 1 inch.

„ „ stress- „ ... 4,000 lbs. to 1 inch.

6.—Design the right hand rafter of T-iron, and the tie-rod of bar-iron, of material for which $f_t = 60,000$ lbs. and $f_c = 36,000$ lbs., using a factor of safety of 5.

TRANSVERSE STRAIN.—FEBRUARY.

(First Year).

1.—What is meant by the term “Co-efficient of Rupture”? Distinguish between “Co-efficient of Rupture” and “Modulus of Rupture.”

2.—A girder 64 feet clear span and 5 feet uniform effective depth, is to carry a uniform steady load of $\frac{3}{4}$ ton per foot run and a uniform travelling load of $\frac{1}{2}$ ton per foot run. The girder to be of wrought-iron with parallel flanges of 12 inches uniform breadth, and with “cross section of equal strength” Calculate the necessary flange areas and flange thickness at every 8 feet.

3.—The flanges of a rolled iron beam are each 5 inches wide and $\frac{3}{4}$ inch deep Its whole depth is 10 inches Determine its length on the condition that a dead load of $\frac{1}{2}$ ton on each lineal foot is to produce a maximum working stress of 4 tons per square inch whether in tension or compression.

4.—In designing a beam to resist transverse strain, what conditions of strength do you derive from the method of sections? Show how these conditions are fulfilled in the case of the beam in Question 3.

5.—A girder 100 feet long carries a uniform steady load of $\frac{1}{2}$ ton per lineal foot and is traversed by a uniform travelling load of $\frac{3}{4}$ ton per lineal foot, 60 feet in length Draw diagrams showing the shearing forces and bending moments when the load has reached such a position that its ends are distant 10 feet and 30 feet from the ends of the girder.

Scales, 10 feet = 1 inch.

„ 10 tons = 1 „

„ 300 foot-tons = 1 „

Explain fully the steps taken in the construction of the diagrams.

CIVIL ENGINEERING.**BUILDING MATERIALS AND EARTHWORK.—MAY.**

(First Year).

1.—Name the classes, according to their origin, into which building stones may be divided, and give a short description of their formation.

2.—What are the constituents of granite, sandstone, marble, and lime stone? State, in each case, the qualities of the stone, and the purposes for which it is best suited.

3.—What constitutes a good brick earth? Give a concise account of the process of brick-making. What are the distinguishing qualities of the different classes of bricks?

4.—Detail the various heads under which limes are classified.

5.—Describe the process of making mortar as practised in Bourkes. What is a hydraulic mortar, and how is it usually made in this neighbourhood?

6.—Account for the hardening and setting of mortar.

7.—What are the usual ingredients of concrete, and how are they mixed?

8.—What are the principal woods in use in the North-Western Provinces for building purposes, and give a general description of each?

9.—State briefly the arrangements you would make of excavating a cutting, in ordinary clay 25 feet deep and bottom width 16 feet, with an average lead of 500 yards, the material being used to form an embankment in continuation of the line of cutting at formation level.

10.—What kind of material makes the best puddle? Describe generally the process of puddling an embankment.

BUILDINGS AND BRIDGES.—MAY.

(Second Year).

1.—Enumerate the principal kinds of roofing used in India, and draw sketches to illustrate the modes of attachment and of finishing off the ridges and hips of each kind.

2.—Sketch clearly the different joints of a wrought-iron King-post truss in which the ties are of rod- and the struts of T-section.

3.—Compare stone, cast-iron and wrought-iron as materials for the construction of fire-proof buildings.

4.—Describe as concisely as possible the conditions which would determine

(a). The site of a bridge.

(b). The description of bridge, whether masonry or iron

(c). The nature of the foundations.

5.—It is the design of the minor bridges of a railway which determines the safe speed of trains passing over them rather than the design of the larger bridges. Explain this.

6.—Describe the four principal methods of erecting girders, stating briefly what circumstances determine which method shall be adopted. Describe also the operation of raising the piers on which a girder rests, showing when it would be an advantage to raise the girder in this way.

7.—Describe the design of the best form of flood openings in long railway embankments, explaining the necessity for such openings and giving reasons as to whether it is better to have many small ones or a few large ones only.

8.—Explain the modern system of training works for large bridges over rivers with wide sandy beds, showing clearly the effect of the "breakwaters."

9.—Describe any three of the following operations:—

(i). The exact measurement of a site which has to be bridged.

(ii). The erection of a temporary spar bridge to span 25 feet between high banks.

(iii). The erection of a derrick to handle loads up to 15 cwt.

(iv). The sinking of a well through an ordinary section of ground.

CARPENTRY.—May.

(First Year).

1.—Sketch neatly three different forms of scarfs for jointing timber to

resist compression, tension and cross-strain respectively, showing how each form is suited to resist the strain.

2.—Distinguish between a joint and a fastening, between a scarfed joint and a fished joint, between carpentry and joinery, and between a dog-legged stair and a geometrical stair.

3.—Sketch as much as is necessary to show the construction of a double-jointed floor in a room 19' \times 16' with a fireplace in the centre of one of the shorter walls. Scale, 6 feet = 1 inch.

4.—Describe any form of trussed beam, explaining the nature of the stress in its different parts.

5.—Sketch the joint between the rafter and the wooden tie-beam of a truss when an iron strap is used. Given that the thrust down the rafter is 15,240 lbs., find the strain on the strap you have drawn. Explain the necessity for the oblique tenon in the above joint.

6.—What are the points to be looked to in a good centre? What is often the result of a badly constructed centre, and state how these results are produced?

7.—Name the different parts of a single-leaf panelled door. What are the points to pay attention to in order that the door may not warp and lose its shape?

8.—Explain the circumstances under which the timber partition dividing the upper rooms of a house has to be a real frame, suited to carry itself. Sketch such a partition for a room 17 feet wide, with the floor of the room above 15 feet above this floor, with two doors 3 feet 4 inches wide and 6 feet 9 inches high, the centre lines of which are at 2 feet 9 inches from the side walls, and draw a skeleton diagram to show the state of strain (whether tension or compression) of the different pieces forming the frame.

ROADS AND RAILWAYS.—Jura.

(*Second Year*).

1.—What do you consider should be the maximum gradient on a mule road and cart road respectively? Sketch the average section, stating dimensions, of the Imperial roads in Upper India.

2.—What should be the co-efficient of traction on a good road, and how does the gradient affect it?

- 3.—Name the different kinds of material used for metalling.
- 4.—What drawings should accompany a report on a proposed road?
- 5.—State briefly the considerations which affect the general direction of a line of railway, and the objects aimed at in making a reconnaissance survey?
- 6.—Explain how you would make use of the aneroid barometer for the purpose of obtaining an approximate section along a given line of country.
- 7.—What circumstances influence the gradients of any particular line?
- 8.—What are the objects of coning the tires of wheels and of the super-elevation of the outer rail on a curve?
- 9.—Describe and sketch four forms of permanent way used in this country.
- 10.—State briefly how you would arrive at the estimated cost per mile of a railway, the necessary surveys for which were complete.

MASONRY.—JUNE.

(First Year).

- 1.—Define the following terms used in masonry —facing, backing, filling, batter, course, bond, and back racking.
- 2.—Write down the chief points to be attended to in a Brickwork Specification.
- 3.—Make a sketch showing the joints in a brick arch of three bricks thick.
- 4.—Describe two methods of providing a firm foundation in marshy soil.
- 5.—Give a short account of the foundations of the Solani Aqueduct, with sketches.
- 6.—Describe the working of a Bull's Dredger when employed in sinking well foundations.
- 7.—What advantages are gained by using hollow revetments in retaining walls?

IRONWORK.—JULY.

(First Year).

- 1.—Enumerate the ores of iron, and state their chemical composition.
- 2.—Write a short account of the influence of carbon on iron.
- 3.—Sketch and describe the furnace in which the calcination of an ore is conducted.
- 4.—Describe the process of refining pig-iron.
- 5.—What is the process of iron-founding in green sand? Describe a Root's blower.
- 6.—How is steel produced by the Bessemer process? What do you understand by temper?

HYDRAULIC WORKS.—JULY.

(Second Year).

- 1.—Describe briefly the main differences between Perennial, Inundation and Navigation Canals.
- 2.—Describe the methods employed in the survey of a project for—
 - (i) A Canal in an uncultivated tract.
 - (ii) A Distributary in a richly cultivated tract.
- 3.—Give the meanings of the following —
Colaba, duty of water, module, regulator, rapid, doab, aqueduct, superpassage, tatil, kili.
- 4.—Sketch the cross section of a Fall or Weir, showing the advantages of water-tight aprons up-stream with sandy foundations, to resist injury to the work by sand blowing, springs, &c.
- 5.—Explain the position of the subsoil water level in soils of recent formation. Why does it maintain a high level in a doab compared with the rivers on either side? What is the Mota?
- 6.—Sketch a syphon to carry about 50 cubic feet per second under a canal 60 feet clear width to outside toe of embankments, the canal bed being on the level of the natural soil.
- 7.—Describe one good style of spur or groyne showing how it acts and what class of river it is most suitable for.
- 8.—Name the four main operations connected with a delta project.

ESTIMATING.

(First Year).

AUGUST.—Building

NOVEMBER.—Bridge.

DECEMBER.—Earthwork.

DECEMBER.—Ironwork.

GROUND TRACING.—OCTOBER

(Second Year).

To trace out on the ground the foundation trenches of a building.

PROJECT.

(Second Year).

Students will submit Plans, Section, Estimate, Specification and Report for the improvement of the Roorkee-Hardwar road as far as the Bahadurabad bridge of the Ganges Canal.

The improvement will consist in raising where necessary, bridging and metalling the existing road. At the crossings of the Ratman and Pathri rivers, and for the approach to the Bahadurabad bridge, the existing road should be diverted so as to cross at right angles to the general direction of the rivers and of the canal. At Bahadurabad the road should pass between that village and Bongla.

The designs already submitted for a bridge over the Solani river will be accepted as they stand for this portion of the work. The bridge over the Ratman river should be of girders on well piers; the bridge over the Pathri river may be of a similar design, the number of spans being specified. The minor drainages should be provided for by culverts of suitable design.

The embankments should be sufficient to prevent flooding of the road.

The road will be metalled with stone 6 inches, covered with kankar 3 inches, full width 10 feet, top width of embankment 30 feet.

Bridges and culverts 12 feet between curbs.

Rates—Local Public Works Department Rates.

Each Student will make an independent survey for his Project. A theodolite traverse will be run starting from the 19th milestone on the canal along the existing road to Bahadurabad, and back to the starting point along the Ganges Canal. The details near the Batman river and the approach to the Bahadurabad bridge will be filled in by plane-table, the rest of the detail required along the road being chain and compass survey.

The survey on each side of the line should be not less than 200 feet on each side in ordinary ground, and 1,000 feet on each side at places where works are proposed.

The levels will be started from the plinth of milestone No. 19, Ganges Canal, R. L. 875.95, and will terminate on the plinth of the canal milestone nearest the Bahadurabad bridge. Several intermediate and well described bench-marks should be recorded.

Scales for Survey and Levels—

General Survey—4 inches = 1 mile.

Plane-table detail—12 inches = 1 mile.

Sections, 8 inches = 1 mile horizontal,

10 feet = 1 inch vertical.

The report and specifications should be concise, clearly written, and should specify work consistent with the rates proposed for payment. These papers should be neatly sewn into a cover.

The plans and drawings should be on sheets of the same size, numbered, signed and dated.

DRAWING.

MAY.

(Second Year).

To cut a section of a Railway culvert and place it in Isometric projection.

JUNE.

(Second Year).

From rough sketch of a bridge given you draw—

$\frac{1}{2}$ Plan showing roadway.

$\frac{1}{2}$ " " foundations from top of footings.

$\frac{1}{2}$ Elevation

$\frac{1}{2}$ Longitudinal section

Cross section, $\frac{1}{2}$ through crown of arch; cross section $\frac{1}{2}$ through centre of pier.

JUNE.

(First Year).

Note—Question 5 must be completed as far as possible before any of the other questions are attempted. In Question 1, only lines regulating height of letters are to be drawn.

1.—Print—

Course of Study

in block letters 0·4 inch high.

Surveying (Curves)

in block letters 0·25 inch high.

Finishing 26th October, 1896

in italics, capitals $\frac{7}{16}$ inch, small letters $\frac{1}{16}$ inch.

2.—The scale of a plan is $\frac{1}{12500}$. Draw it showing yards, and construct a comparative scale of paces, the length of a pace being 30 inches, and a scale of time for a man travelling at $5\frac{1}{2}$ miles an hour.

3.—Represent a line $2\frac{1}{2}$ inches long in each of the following positions:—

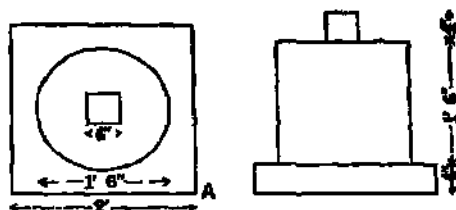
(a). Horizontal and inclined at 35° to the vertical plane of projection.

(b). Inclined at 38° to the horizontal plane, and its horizontal projection making an angle of 38° with the ground line.

(c). Making an angle of 43° with the horizontal, and 32° with the vertical plane of projection

4.—Draw an isometric projection of the milestone of which plan and elevation are given, the point A to the front.

Orthographic scale, 1 foot = 1 inch.



5.—In the bridge given, draw out a sectional elevation on the line BB at a scale of 4 feet = 1 inch.

JULY.

(First Year).

1.—A rectangular block 4 inches long, 2 inches wide, and 3 inches high has on each face a circle described with centre at middle point of longer side and diameter equal to the shorter side. The block rests so that the projection on the horizontal plane makes an angle of 35° with the ground line, and the axis of the block makes an angle of 30° with the horizontal plane. Draw (full size) plan and elevation of the block, and also, in a separate figure, a sectional elevation on a vertical plane making an angle of 15° with the vertical plane of projection, and bisecting the axis of the block.

2.—On the line CD draw a sectional elevation of the building given.

AUGUST

(Second Year)

Small Building from Specification.

AUGUST.

(First Year).

1.—A hexagonal pyramid has one side resting on the horizontal plane, and its axis at an angle of 30° to the vertical plane, base to the front. Side of hexagon $1\frac{1}{2}$ inches, length of axis 4 inches.

Draw a plan and elevation of pyramid, and also a sectional elevation made by a plane which cuts the axis of pyramid, half an inch from base, and parallel to vertical plans.

2.—From the point E, draw a line XY making an angle of 45° with AD, and draw an isometric sectional elevation on the line XY.

Orthographic scale, 5 feet to 1 inch.

SURVEYING.

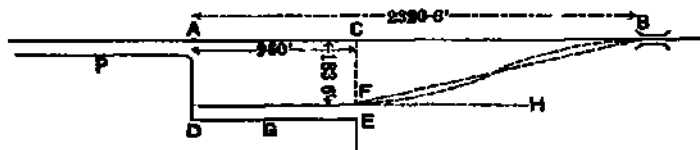
CURVES AND USE AND ADJUSTMENT OF INSTRUMENTS.—FEBRUARY.

(First Year)

1.—Given a curve laid out on the ground, such as a line of rails already laid, how would you determine its degree of curvature and the direction of the tangent at any given point?

2.—Two portions of a canal include an angle of 150° , and are to be joined by a 2° curve, (radius 2864.93 feet), chainage at apex 7,821 feet. Make the necessary calculations. The theodolite must not be used for distances exceeding 600 feet, how would you proceed to lay out the curve?

3.—AB is the centre line of a single line of rail. P a station platform, G a goods platform, B a bridge. It is required to lay out a line to the goods platform from B, this line to consist of a serpentine curve to F and a straight length of line by the goods platform. Find a suitable curve.



4.—A 10° (radius 573 feet) curve of deviation occurs on a straight line of metre gauge railway. The greatest deviation is 100 feet occurring opposite chainage 4,651 of main line. Find at what chainage the deviation will commence, and make the calculations necessary for laying

out the first quarter of the whole deviation by theodolite, and the second quarter by offsets not exceeding 2 feet.

5.—Account for the different arrangement of cross-wires in a theodolite and a level respectively.

6.—Why is it necessary to test a Dumpy level by tracing a level line in the air, when a Y level can be adjusted without it?

7.—Describe as briefly as you can the method of adjusting the double arc Everest theodolite.

You may assume that you have been given two pages, the tops of which are on a level line.

8.—Explain how, in the double arc Everest theodolite, the expedient of observing every point twice, with the face of the vertical arc in an opposite position on each occasion, eliminates all errors due to non-adjustment of the line of collimation, and of the mean line of the verniers on the vertical arc.

EXPERIMENTAL SCIENCE.

MAY

(First and Second Year).

1.—What are the advantages of the metric system of weights and measures?

2.—Define specific heat, latent heat, unit of heat, absolute temperature, isomorphism and allotropism.

3.—State the laws connecting the volume, pressure, and temperature of a gas.

4.—Describe the preparation and properties of oxygen gas. What is ozone, and how may it be detected?

5.—What weight of oxygen could be obtained from 10 kilogrammes of oxide of mercury, and what volume would it occupy at 80° C. and 760 mm. pressure?

6.—What are the chief natural sources of nitrogen, and how may it be prepared?

7.—Explain the action of animals and plants on the atmosphere.

8.—Name the chief compounds of ammonia used in the arts and manufactures, and state the purposes to which they are applied.

9.—Enumerate the various kinds of coal, and state, *shortly*, how they were formed.

10.—Describe with a diagram the manufacture of coal gas. What are the chief by-products of the process?

JULY.

(First and Second Year).

1.—Classify the natural sources of water which can lay claim to the greatest purity. How would you test a given sample of water with a view to ascertaining whether it was fit for drinking purposes or not?

2.—When sending a sample of water to be analysed what information should accompany it? What measures would you adopt to purify a contaminated well, and explain how the agents used act?

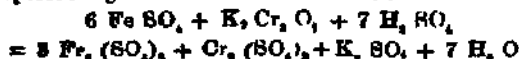
3.—Describe the preparation and properties of Nitric Acid. How may it be detected?

4.—How is "bleaching lime" prepared, and explain its bleaching action?

5.—Give a short account of the manufacture of Sulphuric Acid on a large scale.

6.—Trace the various stages in the process of manufacturing pig-iron from an ore of iron, explaining the chemical actions which take place.

7.—Explain *shortly* the principles on which volumetric analysis depends. How would you prepare a standard solution of potassium bichromate, so that 1 c.c. is equivalent to 0.01 gram of iron. The equation representing the reaction is as follows:—



8.—Explain the difference between dynamite and gun-cotton. What is the meaning of an explosive being "smokeless"?

AUGUST.

(Second Year)

1.—Make a qualitative analysis of the salt marked C.

2.—Find the metallic radical in the salt marked D.

AUGUST.

(First Year).

- 1.—Make a qualitative analysis of the salt marked A.
 - 2.—Find the metallic radical in the solution marked B.
-

OCTOBER.

(Second and First Year).

- 1.—Name and sketch the axes of the six crystallographic systems.
 - 2.—What would be the resultant temperature on mixing 2 kilos. of mercury at 56° C. with 7 kilos. of ice at - 5° C. The specific heat of mercury is .0333, and that of ice 0.513, its latent heat being 79.
 - 3.—State and explain Dulong and Petit's law of specific heats, and show its application to the checking of the determination of atomic weights.
 - 4.—How would you determine the proportion by volume of oxygen and nitrogen in air? What other gases are present, and in what proportion?
 - 5.—What steps would you take to quickly purify a well which is in daily use and which you believe to have been contaminated? How would you afterwards test the water?
 - 6.—Describe the properties of ammonia and the method of its preparation. Give the names and chemical formulae of the chief commercial products of ammonia and their application in the arts and manufactures.
 - 7.—Describe the action of bleaching lime in bleaching organic dyes.
 - 8.—Describe the manufacture of a common lucifer match, and its action on being ignited. In what way does it differ from the "safety" match
-

FERROTYPE.—JULY.

(Second Year).

- 1.—Explain briefly the rationale of the Ferro-prussiate printing process. In what proportions are the chemicals mixed will they deteriorate by keeping? how should they be kept?

2.—Describe fully how you would sensitize the paper. What precautions are necessary in damp weather, and why? How is it recommended to store sensitized paper? What substance is to be added to the ordinary working formula when preparing paper to be stored for subsequent use, and in what proportion should it be added?

3.—Enumerate the articles and materials required to enable you to carry on the processes of printing ferro-prussiate and ferro-gallate copies.

4.—Describe the kind of tracing which gives the best print, giving reasons for your answers.

5.—What regulates the length of exposure for ferro-prussiate and ferro-gallate prints? State all you know on the subject.

6.—Describe an ordinary pressure frame, and state briefly the essential points to be looked to in its construction. In the absence of a pressure frame, show how you would proceed to obtain prints by the ferro-prussiate process?

7.—How may additions or obliterations of lines, figures, &c., be made in white or blue in Ferrotypes copies?

8.—State the cause of the following defects that are sometimes found in ferrotype copies, and say what remedy you would apply in each case —

- (a). When the print is weak looking, with the ground rather a light blue, but lines clear.
 - (b). Print weak and having a somewhat "sunk-in" appearance, ground of a dull blue colour, with lines rather indistinct and of a yellowish brown.
 - (c). Print generally clear and well defined, but at places the lines blurred and of a bluish colour.
-

UPPER SUBORDINATE CLASS.

MATHEMATICS.

ARITHMETIC—APRIL.

(First Year).

1.—(i). Write in words 69040005820004.

(ii). Reduce $\frac{1569}{19956}$ and $\frac{88612}{22909}$ to their lowest terms.

(iii). Find the final remainder after subtracting 6734968 as many times as possible from 86082701.

2.—(a). Find the least number which when divided by 9, 16, 42, 68, 14, or 72 will leave a remainder of 1

(b). Divide $8\frac{1}{2} - 7\frac{3}{4}$ by $12\frac{3}{4} - 11\frac{1}{4}$, and add the result to $\frac{1}{2} + \frac{1}{4} + \frac{3}{8}$.

(c). Find the difference between—

 $\frac{3}{4}$ of £78 16s. 2½d and £35 14s. 8½d. ÷ $1\frac{1}{2}$

3.—Supposing the Sun's distance to be 95,000,000 miles, and the distance of a certain fixed star to be 206,265 times that of the Sun, find the time which light will take to travel from the Sun to the Earth, and from the fixed star to the Earth, the velocity of light being 190,000 miles per second.

4.—Three bells begin to toll together, and toll at intervals of 30, 40 and 45 seconds respectively, when will they all toll together again?

5.—Each copy of a newspaper, whose circulation is 242,090 copies a day, has an area of 6 square feet: how many square miles will 16 weeks' (8 days a week) issue cover?

6.—Find the square root of $4\frac{1}{4}$ and $514\frac{1}{4}$

7.—(a). Reduce 3,251,763 grams to pounds Troy.

(b) Reduce 9,850,673 square inches to acres, roods, and perches.

8.—In a bag of coins there are equal numbers of sovereigns, half sovereigns, crowns, half crowns, florins, shillings, sixpences, and three

penny pieces. The total value of the coins is £948 15s. Find the number of each sort.

9.—The yield of a gold mine increases from $\cdot 004\%$ to $\cdot 0048\%$ per cent.; how much more gold does a ton of ore yield now than before?

10.—If 5 men and 9 boys could do a piece of work in 17 days, in how many days could 9 men and 12 boys do it, the work of two men being equal to that of three boys?

GEOMETRY.—MAY.

(First Year).

1.—If two straight lines AB, DE cut each other the vertical or opposite angles ACD, BCE are equal.

2.—If from C, the middle of a straight line AB, a perpendicular CD, be drawn to that line—(1), every point in the perpendicular is equally distant from the extremities of the line AB; (2), every point without the perpendicular is at unequal distances from the same extremities, A, B.

3.—The sum of all the interior angles of a polygon is equal to twice as many right angles, wanting four, as the figure has sides.

4.—The opposite angles of any quadrilateral figure ABCD, inscribed in a circle, are together equal to two right angles.

5.—The angle ADE, in a semicircle is a right angle, but the angle ABD in a segment greater than a semicircle is less than a right angle, and the angle AFD in a segment less than a semicircle is greater than a right angle.

6.—The angle formed without a circle by two lines EAB, ECD which cut it, is equal to the angle at the circumference standing upon the difference of the intercepted arcs BD, AC.

7.—If a straight line, AC, be divided into any two parts at B, the square made upon the whole line shall be equal to the squares made upon the two parts AB, BC, together with twice the rectangle contained by these two parts.

8.—The rectangle contained by the sum and difference of two straight lines is equal to the difference of the squares upon those lines.

9.—In a given indefinite line to find a point equidistant from two given points without it (see Question 2).

10.—Upon a given finite straight line to describe an equilateral and equiangular octagon (*see* Question 3).

TRIGONOMETRY.—MAY

(*Second Year*).

1.—Demonstrate the following identities —

$$(a). \sec^2 A \operatorname{cosec}^2 A = \sec^2 A + \operatorname{cosec}^2 A.$$

$$(b). \sin^2 A + \operatorname{versine}^2 A = 2(1 - \cos A).$$

2.—The sum of two angles is 30 grades and their difference is 9 degrees: find each angle

3.—Express the secant in terms of the cotangent, and the cosecant in terms of the secant

4.—Find A and B from the following equations —

$$\frac{\sin A}{\cos B} = \frac{\sqrt{3}}{\sqrt{2}}, \quad \frac{\cos A}{\sin B} = \frac{1}{\sqrt{3}}$$

5.—Find by logarithms the value of

$$\frac{(327)^2 \times 42}{4275 + 904} + \sqrt{9254} + 128.$$

6.—A and B are two stations on a hill side, the inclination of the hill to the horizon is 30° ; the distance between A and B is 500 yards. C is the summit of another hill in the same vertical plane as A and B on a level with A, but at B its elevation above the horizon is 15° find the distance between A and C.

7.—While sailing S. W. two ships are seen at anchor, one N N. W. and the other W. N. W. After sailing 5 miles these ships are seen N. and N W respectively. Determine their bearing and distance.

8.—The sides of a triangle are 7, 8, 13; find the greatest angle.

9.—The sides of a triangle are respectively 13 and 15 feet, and the cosine of the included angle is $\frac{1}{25}$ find the third side and also the perpendicular on it from the given angle.

ALGEBRA —JUNE.

(*First Year*)

1.—(i). Multiply $x^2 + y^2 - z^2 - 1$ by $x^2 + y^2 + z^2 + 1$.

(ii). Divide $27a^2 + b^2 + 8 - 18ab$ by $3a + b + 2$.

2.—Reduce to their simplest forms—

$$(2x^2 - 2y^2 - z^2) - (3y^2 + 2x^2 - z^2) - (3x^2 - 2y^2 - z^2), \text{ and} \\ \{x^2 + y^2 - (3x^2y + 3xy^2)\} - \{(x^2 - 3x^2y) - (3xy^2 - y^2)\}.$$

3.—Resolve into elementary factors—

$$a^2 x^2 - 3a^2 x + 2a^2, \text{ and } 12a^2 + a^2 x^2 - x^4.$$

4.—Solve the following equations —

$$(i). \quad \frac{1}{12} (2x - 3) - \frac{1}{6} (3x - 2) = \frac{1}{8} (4x - 3) - 3x^{\frac{2}{3}}$$

$$(ii). \quad \frac{(2x+3)x}{2x+1} + \frac{1}{3x} = x + 1$$

$$(iii). \quad \frac{18}{5-x} + \frac{4}{4-x} = \frac{32}{x+2}.$$

5.—Find the square root of—

$$x^5 - 4x^3 + 10x^2 - 20x^2 + 25x^2 - 24x + 16.$$

6.—Find the Greatest Common Measure of—

$$20x^4 + x^2 - 1 \text{ and } 25x^4 + 5x^2 - x - 1;$$

and the Least Common Multiple of—

$$4 (a^2 - a) \text{ and } 6 (a^2 + a).$$

7.—Reduce to its lowest terms—

$$\frac{5a^4 + 10a^2x + 5x^2x^2}{a^2x + 2a^2x^2 + 2ax^2 + a^4}.$$

8.—A grocer bought tea at 3s. 9d per lb, and coffee at 1s. 2d. per lb., to the amount altogether of £12 15s, he sold the tea at 3s 6d., and the coffee at 1s 6d, and gained 20s by the bargain, how many lbs of each did he buy?

9.—A tailor bought a piece of cloth for £147, from which he cut off 12 yards for his own use, and sold the remainder for £120 5s, charging 5s. per yard more than he gave for it. Find how many yards there were, and what it cost him per yard.

MENSURATION.—JULY

(First and Second Year)

1.—The radii of the ends of a frustum of a cone are 5 feet and 8 feet, and the slant height is 4 feet if the frustum be divided into two of equal curved surface, find the slant height of each part.

2.—Find the side of an equilateral triangle inscribed in a circle whose radius is 10 inches.

3.—If gold be beaten out so thin that an ounce will form a leaf of 20 square yards, find how many of these leaves will make an inch thick, the weight of a cubic foot of gold being 10 cwt. 95 lbs.

4.—Find how many trees there are in a wood one mile long and a quarter-of-a-mile wide, supposing on an average four trees grow on each square chain.

5.—Required the volume of a rectangular parallelepiped which is 8 feet 9 inches long, 5 feet 6 inches broad, and 4 feet 3 inches high. Find also the length of its longest diagonal

6.—An iron pipe is 3 inches in bore, half an inch thick and 20 feet long find its weight, supposing that a cubic inch of iron weighs 4 528 ounces.

7.—A sphere, 16 inches in diameter, is divided into four parts of equal height by three parallel planes, find the volume of each part.

8.—The height of a cylinder is to be equal to the radius of the base, and the volume is to be 500 cubic inches, find the height.

9.—Verify the following statement by examples —The area of the space between two concentric circles is equal to the area of a circle which has for its diameter a chord of the outer circle which touches the inner circle. The radii of the concentric circles are 10 and 6.

10.—Find the quantity of masonry in a roof arch, and its cost at the rate of Rs. 35 per 100 cubic feet Dimensions—length of arch 40 feet, span 15 feet, rise 3 feet, and thickness 6 inches.

CIVIL ENGINEERING.

BUILDING MATERIALS.—JUNE

(First Year).

1.—What are igneous and sedimentary rocks? To which class does each of the following kinds of stone belong —

Granite, quartz, marble, gypsum, sandstone, limestone

Give a short description of each kind, and mention the work for which it is best suited, and name the locality in India where it is obtainable What materials are the busts and pedestals in the College corridor made of?

2.—Describe the manufacture and burning of bricks as seen by you at Roorkee. Take up the process in the following order :—

- (i). Preparing the clay and moulding.
- (ii). Drying and stacking.
- (iii). Burning and classifying.

3.—Give similar information regarding the manufacture of tiles (see Question 2). How are tiles tested before being brought into use ?

4.—Which class of brick is best suited (a), for pukka masonry walls subject to great pressure ; (b), for kucha-pukka masonry, (c), for kucha masonry ? What would be the objection to using only bricks of one class for all kinds of masonry ?

5.—What is the local cost of the following kinds of material, and give details to show how the rate is arrived at in each case —

- (i) Surkhi.
- (ii). Whitewash.

Describe how they are made.

6.—Give a sketch in section of a passawa. How is it loaded and unloaded ? What kind of fuel is most generally used ? What is about the cost of burning bricks, per lakh, by this method ? Under what conditions is it used for brick-burning ?

7.—Describe the common method of burning lime in small quantities. Describe and give dimensioned sketches of a good form of kiln for burning lime in large quantities. What advantages have the latter over the former ?

8.—Describe the blasting operations of sinking a well through rock.

9.—Name at least six of the most useful kinds of trees for building purposes. Give a brief description of each, stating the kind of work for which it is suitable and the locality where it is grown.

10.—Give a sketch of a blast furnace. How are castings made at the Canal Foundry, Roorkee ?

APPLIED MECHANICS.—JUNE.

(Second Year).

1.—Define—Unit of force, the parallelogram of forces, work, the moment of a force.

2.—A hole is punched through a plate of wrought-iron one-half inch in thickness, and the pressure actuating the punch is estimated at 36 tons. Assuming that the resistance to the punch is uniform, find the number of foot-lbs. of work done.

3.—A chain weighing 30 lbs. to the fathom is employed to lift 1 ton to a height of 30 feet by winding the chain on a barrel. Find by calculation and by a scale diagram of work how many units of work will be expended (α), when the outer end of the chain is brought home to the barrel, (β), when 18 feet of it are still hanging free with the weight at the end of it.

4.—Three forces 12, 10 and 2 lbs. act along parallel lines on a rigid body, show by a sketch how they may be adjusted so as to be in equilibrium.

5.—A uniform bar 4 feet long and weighing 4 lbs. can turn about a fulcrum at one end, and a weight of 10 lbs. is hung upon the bar at a distance of 1 foot from the fulcrum. Find the upward force at the free end which will keep the bar horizontal.

6.—Define work put in, lost in, and got out of, a machine, and prove that the work put in equals lost work plus the useful work. How is the "advantage" and the efficiency of a machine reckoned?

7.—The crank or handle which turns a windlass is 14 inches in length, what must be the diameter of the axle when a man exerting a force of 60 lbs. upon the handle raises a tub of coals weighing 2 cwt.?

8.—Suppose that your weight is 10 stone 10 lbs., and that you lift a weight of $\frac{1}{2}$ cwt. on your shoulder, and walk up stairs with it to a height of 20 feet, what work have you expended, and what will be your efficiency as a machine?

9.—Explain how you would prove the truth of the parallelogram of forces by experiment. A vertical force of 50 lbs. is balanced by two forces of 30 lbs. and 40 lbs. Find their directions and the angle between them.

MASONRY.—JULY.

(First Year).

1.—Foundation soils are usually divided into three classes. Name them and describe fully the characteristics of each class.

2.—Describe briefly the principles of construction adopted in the foundations of the Solani Aqueduct.

3.—Show, by sketch, how you would make a cofferdam for the foundations of a pier $25' \times 6'$. The site of the pier contains water and sand to a depth of 5 feet, when stiff clay is found. Puddling material is to be found near the site. Describe in detail how the work should be done.

4.—What peculiarity is there in the construction of skew arches? How are the skew backs shaped? What measures have to be adopted to ensure the courses being laid properly?

5.—What is the best bond for bridge arches, and show it by sketch. Show also by sketch two alternative courses of a brick masonry wall, one-and-a-half bricks thick, and state the kind of bond you use.

6.—Show, by sketch, how the centerings were made for the doorway arches of the staff quarters, R. E. Lines, which were recently remodelled. Draw the arches (scale $\frac{1}{12}$) showing the points of springing on both sides of the doorway clearly.

7.—What are *hollow revetments*? Give a sketch of one and explain its duties fully.

8.—At points A, B, C, D, E, which are bridge sites 3 miles apart, on a canal alignment running East and West, materials have to be collected from a central depôt, which is situated 2 miles South of C, or centre of alignment. The carriage of bricks costs 8 annas per mile per thousand, and that of lime costs 8 annas per mile per 100 maunds. Find the average cost of carriage of bricks per thousand landed at the different sites by the shortest route, also the average cost of carrying lime per 100 maunds.

9.—(See preceding Question) Taking the cost of bricks at the depôt at Rs. 10 per 1000, and that of lime at Rs. 25 per 100 maunds; labour at the various sites Rs. 4-8 per 100 cubic feet of masonry, surkhi at the sites at Rs. 12 per 100 cubic feet, strike an average rate for masonry, per 100 cubic feet, for all the works along the line.

BRIDGES — JULY.

(Second Year).

1.—Show, by sketches, how the *Sher Shah bridge* over the Ghazab river near Mooltan was protected by training works.

2.—Describe the method adopted (*see* preceding question), and detail how it was carried out.

3.—State the reasons which are advanced in favour of this particular style of river training, (*see* Question No. 1).

4.—Describe the method of finding the discharge of a canal by means of floating rods.

5.—If in charge of a railway bridge, and that on inspecting it after a heavy flood you found a great hole scooped out by the flood round one of the piers, state what you would do under the circumstances.

6.—Describe, and show by sketch, some of the best methods of filling up the spandrels of arches.

7.—Compare the merits of deep and shallow foundations. To which class does the Markanda bridge belong (*vide* Model in the Model Room).

8.—Show, by sketches, and give explanation of the method of constructing temporary wire bridges in Gilgit (1891-98).

9.—Give a sketch of the Bone Causeway. Explain how it was constructed. Why was a causeway constructed there in preference to a bridge?

CARPENTRY.—Answer.

(First Year)

1.—Show, by sketch, how the iron tie-rods of the trusses which were recently put up on the Staff Quarters, R E, were secured to the rafters. Give dimensions of both rafters and ties.

2.—Sketch in neatly all the roof timbers of the buildings alluded to (*see* Question No. 1). Give their scantlings and show clearly the details of each joint.

3.—What is a plain butt joint? Under what conditions should it be used in preference to any other kind of joint? Illustrate your views by sketch.

4.—Show how two pieces of timber should be scarfed to resist tension. Scantlings 6" x 4". Scale $\frac{1}{4}$.

5.—Name the timbers required to support a flat terraced roof to cover a room 20' x 16'. What would be their scantlings? Show, by

sketch, the positions of the various pieces and how they are secured to one another, and to the walls.

6.—In a stair well $30' \times 12'$, draw a plan of a dog-legged stair. Tread 12 inches, rise 6 inches, height of lower storey 18 feet. Draw also sections in elevation of the stairs. Scale $\frac{1}{16}$.

7.—Show how to join two pieces of wood $8" \times 6"$ scantlings together, so as to be suitable for a verandah post. Scale $\frac{1}{2}$. What is the nature of the strain to which a verandah post is subjected?

APPLIED MECHANICS.—August.

(First and Second Year).

1.—Define—Density, tenacity, stress, strain and load.

2.—Find what weight a deodar wood post $6" \times 6" \times 10'$ long will bear with safety? Taking the crushing strain of deodar at 5,000 lbs. Factor of safety 10.

3.—Find the breaking weight at the centre of a beam of Memel fir, 12 inches deep, 9 inches wide and 20 feet between the points of support. The breaking weight at the centre of a beam 1 foot long and 1 inch square is 545 lbs.

4.—A round bar of steel 1 inch in diameter and 10 feet long, is fixed at its upper end, and a load is applied to the bottom end and stretches it .05". Find the load if the modulus of elasticity is 30,000,000 lbs.

5.—Find, by construction, the stress on each part of a king-post truss, span 24 feet, height 8 feet, load 700 lbs. per foot run of rafter, applied at the joints only.

Scale for frame-diagram 4 feet to 1 inch; for stress-diagram 2,000 lbs. to 1 inch.

6.—A barge, supposed to be of rectangular cross section, is 60 feet long, 10 feet broad and 4 feet deep outside measure. The thickness of the sides averages 0.1 foot, and the weight of the material of which they are composed averages 100 lbs per cubic foot. Find how many tons load would sink the barge 3 feet.

7.—The discharge from an orifice 1 inch square, with a head of 9 feet of water is 7 cubic feet per minute. Find the co-efficient.

8.—A notch is of the form of a right-angled triangle. Estimate the discharge when the width of the notch at the water surface measures 15 inches.

RAILWAYS.—NOVEMBER.

(Second Year).

1.—Sketch, with dimensions, one good pattern each of the following.—*Sleeper, chair, fish-plate, fang-bolt.*

2.—Sketch or describe the approved pattern of permanent way now in use in India (these are exhibited in the Model Room).

3.—Draw a cross section of a *metre-gauge* single track railway

4.—What are the ordinary gauges used on railways in England? What is the standard gauge for India?

5.—What is the use of a *check rail* on a very sharp curve? Show the position of one by a sketch.

6.—What are *level crossings*? What precautions must be observed to prevent accidents at these crossings?

7.—Describe the method of *ranging* and *setting-out* tunnels.

8.—What considerations should guide you in the selection of a route for a railway between any two points?

EARTHWORK.—DECEMBER.

(First Year).

1.—Define—*Leakspit, length of lead, made earth, spoil banks, side cuttings, side-long ground, boning staves, bevil plumb rule, clinometer.*

2.—Explain the three ways in which an embankment may be constructed. What are the advantages and disadvantages of each, and under what circumstances may each be adopted?

3.—Sketch and describe fully the method of changing the course of a river.

4.—What are the tools necessary for blasting rock, and mention the kind of materials of which the blasting tools should be made, giving the reasons which lead to the choice of material.

5.—When taking out a cutting, how is a record kept of the original surface of the ground? How are side slopes of a cutting dressed off accurately?

6.—How should breaches or hollows in embankments be closed, and where should the earth be taken from for this purpose.

7.—Find the cost of rock-cutting on a piece of road, details of which are given on the accompanying section, at the rate of Rs. 7 per hundred cubic feet. The sides of the cutting to be perpendicular. The road, which is 20 feet wide, falls from A towards B with a gradient of 1 in 20; its formation level at A being 8 feet below the ground line. The ground slopes across the line of road in the proportion of 1 in 10.



8.—A cutting with side slopes 2 to 1 has to be taken through ground sloping across the line in the proportion of 1 in 7. Find the lengths of the side widths.

Width of cutting at bottom 12 feet, and central depth 10 feet.

ROADS.—JANUARY

(Second Year).

1.—What do you understand from the following expressions:—A road having a gradient of 1 in 100, a cutting whose slope is 2 to 1; a road whose co-efficient of friction is 1-40th, side-long ground; ruling gradient; watershed of a country.

2.—Would you make any difference between the side slopes of cuttings and embankments for a road in the same soil? Give reasons for your answer. In what way is it usual to protect the slopes of cuttings and embankments from the effects of the weather?

3.—When a road running through a flat country is in embankment, what should be its minimum height above the highest known flood level? What are the reasons for thus fixing this height?

4.—Give a sketch, with dimensions, of a first class metalled road in embankment passing through valuable land, and having heavy traffic on it: also another section of the same class of road passing through ordinary land.

5.—Give a specification for repairing a metalled road with a new 4½ inches layer of kankar, detailing collection and stacking of the kankar, and the preparation of the surface of the old layer, consolidation, &c. What is the local rate for this work?

6.—A temporary road has to be taken over the sandy bed of a river. How would you propose making it?

7.—In fixing the alignment for a new line of road, by how much might its length be justifiably increased in order to bring it nearer to kankar quarries? Give your reasons.

8.—In designing a road, is straightness of more or less importance than easy gradients? On looking at a map of a straight road over a hilly country, what opinion would you form respecting the nature of the road?

9.—What is moorum? Describe its properties as a road metal. Where is it generally to be found? What material difference exists between moorum and kankar metalling?

ESTIMATING.

(Second Year)

MAY.—Earthwork.

JUNE.—Bridge.

JULY.—Building.

AUGUST.—Building.

PROJECT

(Second Year).

1.—Design a Cook-house, for 50 men, for the use of the Upper Subordinate Class.

2.—The present cook-house to be dismantled to make room for the proposed new one.

3.—All drawings, plan and survey will be on one sheet of paper.

4.—The report and specification should be concise and clear.

5.—Seventy-five marks will be given for this Project. Details as follows :—

(a).	Report and specification,...	...	...	10
(b).	Estimate, ...	...	...	15
(c).	Engineering, ...	...	...	25
(d).	Calculations, ...	...	...	5
(e).	Drawing, ...	...	...	20
Total, ...				75

To obtain passing marks all sub-heads must be attempted. The general neatness of the way the Project is submitted will be considered in the marking.

GROUND TRACING—JANUARY.

(Second Year)

Make a working plan of the foundation trench of the bridge and syphon shown in the drawing before you. The bottom of the trench will be 6 inches wider, on either side, than the foundations, and its sides will slope at $\frac{1}{1}$ up to the ground surface, the level of which is shown by the top of the road-metalling in the Section on A.A.

All slopes to be coloured in burnt sienna.

Scale, 10 feet to an inch.

Write all dimensions clearly and neatly on the plan, which will be subsequently used for laying the tracing down on the ground.

CURVES AND USE AND ADJUSTMENT OF INSTRUMENTS.—FEBRUARY.

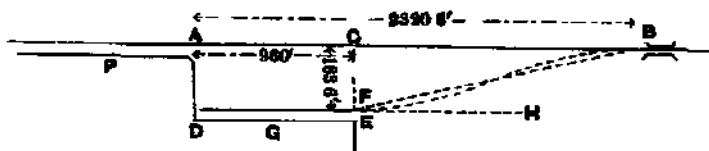
(Second Year).

1.—Given a curve laid out on the ground, such as a line of rails already laid, how would you determine its degree of curvature and the direction of the tangent at any given point?

2.—Two portions of a canal include an angle of 150° , and are to be joined by a 2° curve, (radius 2864.93 feet), chainage at apex 7,821 feet. Make the necessary calculations. The theodolite must not be used for distances exceeding 600 feet, how would you proceed to lay out the curve?

3.—Calculate the offsets at every 10 feet along a 100 feet chord for a 5° curve, (radius 1146.28 feet), explaining any formula you use.

4.—AB is the centre line of a single line of rail. P a station platform, G a goods platform, B a bridge. It is required to lay out a line to the goods platform from B, this line to consist of a serpentine curve to F and a straight length of line by the goods platform. Find a suitable curve.



5.—A 10° (radius 573 feet) curve of deviation occurs on a straight line of metre gauge railway. The greatest deviation is 100 feet occurring opposite chainage 4,651 of main line. Find at what chainage the deviation will commence, and make the calculations necessary for laying out the first half of the whole deviation by theodolite, and the second half by offsets not exceeding 2 feet.

6.—Account for the different arrangement of cross-wires in a theodolite and a level respectively.

7.—Why is it necessary to test a Dumpy level by tracing a level line in the air, when a Y level can be adjusted without it?

8.—Describe as briefly as you can the method of adjusting the Y level.

DRAWING.

JULY.

(Second Year)

Draw an Isometrical Projection of the Rajbaha bridge and syphon, leaving out all earthwork.

Scale, 4 feet = 1 inch.

JANUARY.

(Second Year).

Draw an Isometrical Projection of the Gardener's house, leaving out roof covering.

Scale, 2 feet = 1 inch.

JANUARY.

(First Year).

Draw a sectional elevation of the Gardener's house, on a plane containing line *xyz*

Scale, 2 feet = 1 inch.

FERROTYPE.—August.

(Second Year).

1.—Explain briefly the rationale of the Ferro-prussiate printing process. In what proportions are the chemicals mixed will they deteriorate by keeping how should they be kept?

2.—Describe fully how you would sensitize the paper. What precautions are necessary in damp weather, and why? How is it recommended to store sensitized paper? What substance is to be added to the ordinary working formula when preparing paper to be stored for subsequent use, and in what proportion should it be added?

3.—Enumerate the articles and materials required to enable you to carry on the processes of printing ferro-prussiate and ferro-gallate copies

4.—Describe the kind of tracing which gives the best print, giving reasons for your answers

5.—What regulates the length of exposure for ferro-prussiate and ferro-gallate prints? State all you know on the subject

6.—Describe an ordinary pressure frame, and state briefly the essential points to be looked to in its construction. In the absence of a pressure frame, show how you would proceed to obtain prints by the ferro-prussiate process?

7.—How may additions or obliterations of lines, figures, &c., be made in white or blue in Ferrotypes copies?

8.—State the cause of the following defects that are sometimes found in ferrotypes copies, and say what remedy you would apply in each case —

- (a). When the print is weak looking, with the ground rather a light blue, but lines clear.
- (b). Print weak and having a somewhat "sunk-in" appearance, ground of a dull blue colour, with lines rather indistinct and of a yellowish brown.
- (c). Print generally clear and well defined, but at places the lines blurred and of a bluish colour.

SURVEYING

DECEMBER.

(*First and Second Year*).

Note—First Year Students to omit Question 9

1.—Define "Azimuth," "Datum Line," "Traverse," "Line of Collimation," "Reduced Level," "Refraction," "Parallax"

2.—What is the difference between a bearing and an inward angle? Explain how you would repeat an angle, and what is the advantage gained?

3.—Show any two correct methods for finding the width of a river, (i), *supposing you have an angular instrument*; (ii), *if you have a chain and flags only*.

4.—What is the difference between the measuring chain generally used in India and Gunter's chain? For what particular kind of work is the latter best adapted?

5.—What do you understand by the term "compound levelling"? Suppose your level were out of adjustment, what precautions would you employ in using it in the field to prevent errors accumulating?

6.—In running a line of levels on a certain bearing, two serious obstacles, a large village and a jhil, are met with. The village cannot be seen through, but the jhil can be seen across from either side. How

do you propose to pick up both the levels and the bearing on the further side of each obstacle?

7 — What is the use of bench-marks, and what are suitable positions for them? In running a line of levels how often should they be left? If no suitable object on which to leave a bench-mark can be found, how would you construct one?

8 — Complete the accompanying Traverse Table and plot it to a scale of 2½ inches to a mile.

9 — Of what use is a Vernier Scale? Why would not an ordinary decimal scale be as applicable? Show that it makes no difference whether $(n - 1)$ or $(n + 1)$ parts of the primary scale be divided into n parts for the Vernier Scale

FINAL EXAMINATION, MARCH, 1897.

ENGINEER CLASS.

MATHEMATICS.

No. 35 — ARITHMETIC.

1.—Multiply 285×4.02 ; divide 2961 by .007, and find the value of 2778125 of 6s. 8d.

2.—A cubic foot of wood weighs $11\frac{1}{2}$ lbs., what is the weight of a beam 24 feet long, $2\frac{1}{2}$ feet wide, and $2\frac{1}{2}$ feet thick, and what is its value at $3\frac{1}{2}$ s per cubic foot?

3.—The value of a pound of gold is four times that of a pound of silver, and the weights of equal quantities of gold and silver are in the ratio of 19 to 10, find the value of a bar of silver equal in bulk to £1,750.

4.—A watch gains 1 minute and 15 seconds a day. It is set right at noon on the 12th November what will be the true time when it points at noon on the following Christmas day?

5.—(a) Find the Greatest Common Measure of 5,916, 94,808 and 182,787

(b). Find the Least Common Multiple of 16, 90, 91, 280 and 455.

6.—Simplify the following expression —

$$\frac{\frac{1}{2} \text{ of } 6\frac{1}{2} \text{ of } 24\frac{1}{2} - 4\frac{1}{2} \times 8\frac{1}{2} - 8\frac{1}{2}}{8\frac{1}{2} \times 8\frac{1}{2} - 4\frac{1}{2} - 7\frac{1}{2} \times 5\frac{1}{2} - 14\frac{1}{2}} \times 4\frac{1}{2} \text{ of } £3 \text{ } 17s.$$

7.—If 78 tons 10 cwt. 8 qrs. 10 lbs 1 oz. cost £722 4s. $4\frac{1}{2}$ d., find the cost of 123 tons 8 cwt. 1 qr 23 lbs 13 oz.

8.—The average dividend paid during 8 years by a railway company is 88125 per cent. The dividends paid in the first 7 years were respectively, $3\frac{1}{2}$, $3\frac{1}{2}$, $3\frac{1}{2}$, 4, $4\frac{1}{2}$, $4\frac{1}{2}$, 4 per cent. What was the dividend in the 8th year?

9.—What would be the ready money payment of an amount of £27 13s. 6d., discount being allowed at 5 per cent.?

10.—An up train 88 yards long, travelling at the rate of 35 miles an hour, meets a down train 88 yards long at 12 o'clock, and passes it in 6 seconds. At 15 minutes and 6 seconds past 12 o'clock the up train meets a second down train 152 yards long, and passes it also in 6 seconds, at what time will the second down train run into the first?

NO. 12.—ALGEBRA

1.—Simplify—

$$(i). \quad 24 \left\{ x - \frac{1}{2}(x-1) \right\} \left\{ x - \frac{3}{4}(x-2) \right\} \left\{ x - \frac{5}{8}(x-1\frac{1}{2}) \right\}.$$

$$(ii). \quad \frac{a^3}{(a-b)(a-c)} - \frac{b^3}{(a-b)(b-c)} + \frac{c^3}{(c-a)(c-b)}.$$

2.—Find the meaning of a^{-n} when n is a positive number, whole or fractional, and also find a meaning for a^n .

3.—Find values for x and y from the following equations:—

$$(i). \quad \left. \begin{aligned} \frac{7x - (y + 24)}{4} &= \frac{12x - 3y + 6}{5} \\ \frac{6x - y}{23 - 2(x + y)} &= \frac{8}{19}. \end{aligned} \right\}$$

$$(ii). \quad \left. \begin{aligned} 2x^2 - 2xy + y^2 &\approx 65 \\ x^2 + 8xy - 2y^2 &\approx 38 \end{aligned} \right\}$$

4.—Write down the sum and the product of the roots of the equation $15x^2 - 64x + 65 = 0$.

5.—Find the value of a recurring decimal.

6.—A and B are talking. A says to B—"I am twice the age you were when I was the age you are, when you are the age I am our united ages will be 63." What are the present ages of A and B?

7.—Find the sum to 43 terms of the series—

$$1\frac{1}{2} + 1\frac{43}{63} + 2\frac{16}{63} + \dots\dots\dots$$

Sum to infinity

$$2, -6, +4 \dots\dots\dots$$

8.—Find the number of permutations of x things taken all together which are not all different.

A cricket eleven is to be chosen from twenty-two men, fifteen of whom cannot bowl and seven cannot bat. The team is to consist of six batsmen and five bowlers. In how many ways can the team be chosen?

8.—Prove that—in the expansion of $(1+x)^n$ the co-efficient of the r^{th} term from the end is equal to the co-efficient of the r^{th} term from the beginning

No. 15.—GEOMETRY.

N.B.—Engineer Class to do Questions 1 to 9 inclusive.

Upper Subordinate Class to do Questions 1 to 5, 10 and 11.

1.—Define the following terms:—A plane superficies, a scalene triangle, a regular polygon, a segment of a circle, similar figures.

2.—If two straight lines AB, DE cut one another at C, the vertical or opposite angles ACD, BOE are equal.

3.—If one side BC of a triangle ABC be produced to D, the exterior angle ACD is equal to the two interior and opposite angles, and the three interior angles of every triangle are together equal to two right angles.

4.—The opposite angles of any quadrilateral figure ABOD inscribed in a circle are together equal to two right angles.

5.—A and B are two inaccessible points on the farther bank of a river show how to find the distance between them

6.—Define the following terms —A solid, a cone, a cube

7.—To inscribe a circle in a given triangle.

8.—To find a third proportional to two given straight lines

9.—If two planes cut one another their common section is a straight line.

10.—The square upon the hypotenuse of any right-angled triangle is equal to the sum of the squares upon the two other sides

11.—Show how to make a square equivalent to a given triangle.

No. 28.—TRIGONOMETRY.

N.B.—Upper Subordinate Students to omit questions 8 and 10

1.—Express the diagonals of a parallelogram in terms of two adjacent sides and the cosine of the acute angle of the figure.

Express $\tan 2a$ in terms of $\tan a$.

2.—Prove the following identities —

(a). When $\sin B$ is the Arithmetic Mean of $\sin A$ and $\cos A$ that—

$$\cos 2B = \cos^2 (A + 45^\circ)$$

$$(3). \frac{\sec A + 1}{\sec A - 1} - \frac{\sec A - 1}{\sec A + 1} = 4 \cot A \cdot \operatorname{cosec} A.$$

$$(c). \operatorname{cosec} A (\sec A - 1) + \sin A = \cot A (1 - \cos A) + \tan A.$$

8.—Prove that the log of any power integral or fractional of a number equals product of the log of the number and the index of the power, and that—

$$\log_2 b \times \log_3 c \times \log_4 a = 1.$$

Given $\log 3 = .4771213$ find $\log 243$ and $\log .03$.

4.—The sides a, b, c , of a triangle are as the numbers 4, 5, 6. Find the angle B

5.—Find θ in the following equations:—

$$(a). 2 \sin \theta \tan \theta + 1 = \tan \theta + 2 \sin \theta$$

$$(b). \tan \theta + \cot \theta = 4.$$

6.—For a triangle ABC, $b = 723$, $c = 259$, $A = 85^\circ 18'$. Solve the triangle.

7.—Two chimneys are of equal height. A person standing between them in the straight line joining their bases, observes the elevation of the near one to be 60° . After walking 80 feet in the direction at right angles to the straight line joining their bases, he observes the elevation of the two to be 45° and 30° respectively. Find their height and the distance between them.

8.—Show that—

$$(1). \tan^{-1} \frac{\sqrt{3} + 1}{\sqrt{3} - 1} - \tan^{-1} \frac{1}{\sqrt{3}} = \frac{1}{2} \sin^{-1} \frac{2}{3} + \tan^{-1} \frac{1}{2}$$

$$(2). \text{If } \sec \theta - \operatorname{cosec} \theta = \frac{1}{2}, \theta = \frac{1}{2} \sin^{-1} \frac{3}{2}.$$

9.—Find an expression for the radius of the incircle of a triangle.

Show that $\Delta = abc \cos \frac{A}{2} \cdot \cos \frac{B}{2} \cdot \cos \frac{C}{2}$ where Δ is the area of the triangle ABC.

10.—Prove DeMoivre's theorem when n is a positive integer.

Find the cube root of $a + b \{\sqrt{-1}\}$.

No. 30.—MENSURATION.

1.—Two equal circles of one inch radius, are distant two inches from each other, and a cord passes tightly round them, crossing between them; find the length of the cord and the area enclosed by it.

2.—How many bullets of a quarter of an inch in diameter can be cast from the metal of a spherical ball 3 inches in diameter, supposing no waste in the process?

3.—The adjacent edges of a rectangular box are $3\frac{1}{2}2857\bar{1}$, $5\frac{1}{2}42857$, and $10\frac{1}{2}2857\bar{1}$ inches; find the cost of gilding its exterior at $1\frac{1}{2}$ d. per square inch.

4.—A frustum of a circular cone is trimmed just enough to reduce it to a frustum of a pyramid with square ends: find how much of the volume is removed.

5.—Find the number of gallons of water required to fill a tank the depth of which is $4\frac{1}{2}$ feet, and the top and bottom of which are rectangles, the corresponding dimensions of which are $250' \times 16'$, and $240' \times 14'$.

6.—The radius of the inner surface of a leaden pipe is $1\frac{1}{2}$ inches, and the radius of the outer surface is $1\frac{9}{16}$ inches: if the pipe be melted, and formed into a solid cylinder of the same length as before, find the radius.

7.—The cost of a cube of metal at £3 10s 4d. per cubic inch, is £1,206 4s 4d. find the cost of gilding it over at $\frac{1}{2}$ d. per square inch.

8.—The perimeter of one square is 748 inches, and that of another is 386 inches. find the perimeter of a square which is equal in area to the other two.

9.—A circle whose diameter is 10 feet passes through the extremities of a diameter of another, and bisects a radius at right angles: find the area of the part common to both.

10.—A zone of a sphere is 4 inches in thickness; the diameter of the base is 12 inches, and that of the top 9 inches: find the convex surface and the volume.

MECHANICS AND CONIC SECTIONS.

No. 1.—MECHANICS, PART I.

1.—What is the difference between constant and variable velocity? How are they measured? How is variable acceleration measured?

Two trains pass through stations 100 miles apart towards one another with velocities of 10 and 15 miles per hour. They are respectively accelerated at 1 and 2 miles per hour. When and where will they meet, and what will be their velocities then?

2.—Two spheres of glass 5 and 8 oz. impinge on one another with velocities of 10 and 4 feet per second (1), in the same direction, (2) in

opposite directions. The co-efficient of rebound is $\frac{1}{2}$. Determine the motion after impact.

3.—If a weight W be connected by a weightless string hanging over a smooth pulley with a scale pan containing two weights, each equal to W , lying one upon the other, find the pressures during free motion between these weights, the weight of the pan being neglected.

4.—Define Work, Kinetic Energy, Potential Energy. Prove that when a blow acts on a body, the change in the kinetic energy is equal to the work done by the blow

5.—Two particles are started simultaneously from the points A and B , 5 feet apart, one from A towards B with a velocity which would cause it to reach B in 3 seconds, and the other at right angles to the former, and with three-fourths of its velocity. Find their relative velocity in magnitude and direction, the shortest distance between them, and the time at which they are nearest to one another.

6.—A man, weighing 12 stone 2 lbs. is riding a bicycle weighing 30 lbs. at a uniform speed of 8 miles per hour down an incline of 1 in 100, against the resistance of the air and the road, without working the pedals; what horse-power must the man work at in order to go up a hill of 1 in 200 at the same speed, the cranks being 5 inches long and making 100 revolutions a minute?

7.—Define a couple. Find a formula to determine the position of the centre of parallel forces of any number of parallel forces.

8.—A ball, of which e is the modulus of elasticity, after dropping through a height h , strikes at a point A , a plane inclined to the horizon at an angle α , and afterwards passes through a point B in a horizontal line through A . Find the time of moving from A to B , and show that the problem is impossible if e is less than $\tan^2 \alpha$.

9.—One end of a string is fastened to a weight P , the string passes over a fixed pulley, and under a moveable pulley, and has its other end attached to a fixed point, a weight Q is attached to the moveable pulley; determine the motion supposing the three portions of the string are all parallel.

NO. 17.—MECHANICS, PART II.

1.—Find the useful horse-power of a water wheel supposing the stream to be 5 feet broad and 2 feet deep, and to flow with a velocity of

80 feet per minute, the height of the fall being 14 feet, and the efficiency of the machine being .85.

2.—In the system of pulleys in which each rope has one end fixed, passes round a pulley, and is fastened to the preceding one, find a formula for the force exerted, when the weights of the pulleys are taken into account.

3.—A water wheel of 10 feet diameter takes in the water from a still reservoir at its highest point, and empties its buckets after a quarter of a revolution. Compare the power it produces and its efficiency when it makes (1) 20, (2) 5 revolutions in a minute.

4.—In what distance can a train going 60 miles an hour be brought to rest by the brakes, supposing them to press on the wheels with two-thirds the weight of the train and a co-efficient of friction .18 in addition to a passive resistance of 20 lbs. weight per ton on the level.

5.—A ball falls from a height h on a horizontal plane x then rebounds; falls, and rebounds again, and so on. Find the sum of the spaces described.

6.—A body is projected with the velocity u at the inclination α to the horizon, and by continually rebounding from the horizontal plane describes a series of parabolas. Find the sum of the ranges, and the time which elapses before the body ceases to rebound.

7.—If a railway carriage without flanges to its wheels moves on a circular curve, show how the effect of the centrifugal force may be counteracted by a rise of the outer rail, and find what the rise of the outer rail above the inner rail should be if the radius of the circle be 1,520 feet, the velocity of the train 30 miles an hour, and the breadth of the track 5 feet.

8.—What is a simple pendulum? Find an expression for its time of oscillation.

9.—What do you understand by the moment of inertia of a body about a given axis of rotation?

Find the moment of inertia of a rectangular lamina about an axis perpendicular to it.

NO. 23—HYDRO-MECHANICS.

1.—Distinguish between "whole" and "resultant" pressure of a fluid on any surface. Find the whole pressure on the curved surface of

a smooth vertical cylinder of 1 foot diameter and 2 feet high, filled with water and closed by a heavy piston weighing 8 lbs.

2.—A rectangular lamina $ABOD$ has a weight attached to the point B and floats in water with its plane vertical and the diagonal AC in the surface; prove that the specific gravity of the fluid is three times that of the lamina.

3.—A cylindrical diving bell, 7 feet high and of a cross section of 14 square feet, is lowered until the top of the bell is 20 feet below the water surface. If the height of the water barometer be 34 feet, how high will the water rise inside the bell, and how much air at atmospheric pressure would have to be introduced to keep the water from entering?

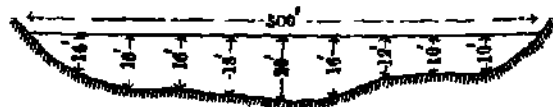
4.—A piece of lead weighing 17 grammes and a piece of sulphur balance each other when immersed in water. When immersed in alcohol of density 0.9, a weight of 1.4 grammes has to be added to the lead to restore equilibrium. Find the weight of the sulphur.

5.—Show that the product of the pressure and the volume of a gas is proportional to the absolute temperature.

The air in a spherical globe of 30 centimetres diameter is compressed into another of 15 centimetres diameter, and the temperature is raised from 10°C to 15°C . Compare the pressures of the air in the two cases, and also compare the pressures on the surfaces of the two globes.

6.—At the gate of a branch canal the bed of the branch is 1 foot below that of the main canal. The depth of canal supply is 7 feet and that of the branch supply is $3\frac{1}{2}$ feet. The co-efficient for the gate is 0.78 and its width is 9 feet. Find the discharge through it when lifted 0.5 foot above the sill.

7.—A bridge with stone piers is to be constructed across a river,



the cross section of which at highest flood is as shown. The mean velocity of the river has been found by floats to be 4 feet per second, and its bed is of a nature not to be eroded by a mean velocity of 6 feet per second. How much of the waterway may be obstructed by the piers

without creating more than the safe mean velocity, supposing them to be curved and acute towards the stream? Find also the approximate afflux and the mean velocity which would be caused by bridging it with 7 arches of 40 feet span.

6.—An irrigation channel with side slopes of 1 to 1 is to discharge 350 cubic feet per second with a fall of 1 in 3,000 and a velocity of 3 feet per second. Find the depth and the bottom width.

No. 82.—GEOMETRICAL CONIC SECTIONS.

1.—If two parabolas have a common focus and axis, and have their vertices on opposite sides of the focus, they will intersect at right angles.

2.—Show by drawing a tangent through the extremity of the axis minor of an ellipse that the semi-axis major is a mean proportional between the distance from the centre to the focus, and that from the centre to the directrix.

3.—Show how to cut a parabola from a right cone.

4.—PQ is a common tangent to a parabola and a circle described on the latus rectum as diameter, prove that SP and SQ make equal angles with the latus rectum.

5.—P is a point on a parabola, of which S is the focus and A the vertex. The normal at P meets the axis in G, and the directrix meets the axis produced in X, Q is the middle point of SG. Prove that—

$$QX^2 - QP^2 = 4AS^2.$$

6.—If the ordinate of a point P on a parabola bisect the subnormal of another point P', show that the ordinate of P is equal to the normal of P'.

HIGHER PURE MATHEMATICS.

No. 14.—CO-ORDINATE GEOMETRY.

1.—Find the equation to a straight line—

- (a). In terms of the intercepts on the axes.
- (b). In terms of the perpendicular from the origin and its inclination to the axis,
- (c). Referred to oblique axes.
- (d). In polar co-ordinates.

2.—Show analytically that the normal at any point of an ellipse bisects the angle between the focal distances of that point.

3.—Find the equation to the straight line joining the centres of two circles whose equations are

$$x^2 + y^2 + 16x - 16 = 0 \text{ and } x^2 + y^2 + 10y - 144 = 0,$$

and determine whether the circles intersect or not.

4.—If two equal parabolas have the same focus and their axes perpendicular to each other, they enclose a space whose length is $8a$, and breadth is $2a\sqrt{2}$, where $4a$ is the latus rectum of the parabola.

5.— A and A' are the extremities of the major axis of an ellipse, T is the point where the tangent at the point P of the curve meets AA' produced, through T a straight line is drawn at right angles to AA' and meeting AP and $A'P$ produced at Q and R respectively. Show that $QT = RT$.

6.—Find the equation to the ellipse which has the point $(-1, 1)$ for focus, the line $4x - 3y = 0$ for directrix, and whose eccentricity is $\frac{4}{5}$.

NO. 27.—DIFFERENTIAL CALCULUS.

1.—Differentiate—

(i) $y = \log \{ \log (a + b^x) \}$

(ii) $y = \frac{\sqrt{a+x}}{\sqrt{a} + \sqrt{a-x}}$

(iii) $y = \tan a^{\frac{1}{x}}$

2.—Expand $e^{\tan^{-1}x}$ to five finite terms.

3.—Find the fraction which exceeds its second power by the greatest possible quantity.

4.—A high vertical wall is to be braced by a beam which must pass over a parallel wall a feet high and b feet distant from the other. Find the length of the shortest beam that can be used for this purpose.

5.—Find the asymptotes of the following curves.—

(i) $x^4 - y^4 - a^2xy = 0$.

(ii) $x^3 + y^3 = a^3$.

6.—Find the radius of curvature of the curve $y = x^3 + 5x^2 + 6x$ at the origin

At what point is the radius of curvature infinite?

7.—Trace the curve—

$$y^2 (a^2 + x^2) = x^2 (a^2 - x^2)$$

Find its maximum ordinate, and determine the angles at which the curve cuts the axis of x .

No. 29.—INTEGRAL CALCULUS.

1.—Integrate—

(i) $\int_0^a \sqrt{a^2 - x^2} dx.$

(ii). $\int \frac{\sqrt{x^2 - a^2}}{x} dx.$

(iii). $\int \frac{x dx}{(x^2 + a^2)(x^2 + b^2)}.$

(iv) $\int \sin^3 \theta \cos^2 \theta d\theta.$

(v). $\int \frac{x dx}{x - \sqrt{x^2 - a^2}}.$

2.—Find the length of a quadrant of the curve

$$\left(\frac{x}{a}\right)^{\frac{2}{3}} + \left(\frac{y}{b}\right)^{\frac{2}{3}} = 1.$$

3.—Find the centre of gravity of a frustum of a paraboloid of which the radii of the two ends are 3 inches and 7 inches, and the length of the axis 4 inches.

4.—Find the volume of the closed portion of the solid generated by the revolution of the curve—

$$(y^2 - b^2)^2 = a^2 x \text{ round the axis of } y.$$

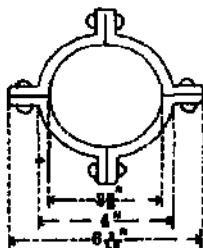
5.—Find the area of the loop of the curve $16 a^2 y^2 = b^2 x^3 (a^2 - 2ax).$

APPLIED MECHANICS.

No. 8.—DIRECT STRESS.

1.—Why is it a more complicated problem to calculate the resistance to compression of a given piece of material than its resistance to tension?

2.—Find the safe working load of a rolled iron segment-column 12 feet high, and of the sectional dimensions figured in the margin, supposing it to be fixed at one end and free at the other.



Safe working stress 5 tons per square inch.

3.—Under what circumstances would you consider the above pillar to fulfil the given conditions of fixation, and compare the strength of this pillar with that of one of the same material, length, state of fixation, and sectional area but of solid circular section.

4.—Of the two methods of finding the stresses in the bars of a Roof Truss described in the text-book as the Method of Resolution and the Polygonal Method respectively, state in what respects the latter is the preferable method.

5.—Find by a single stress-diagram (i.e., by combining the normal and vertical load at each joint) the stresses in the bars of the following roof truss. Each rafter is braced by two struts; the rafters and tie-rod (which is horizontal) being trisected by the bracing, and the points of trisection of the tie-rod are tied to the apex of the truss. The load is applied to the rafters at the joints only, and the tie-rod carries a load of 8,000 lbs. at the two points of trisection.

Span = 60 feet Rise = $\frac{1}{2}$ span.

Total vertical load of roofing on one truss = 37,500 lbs.

Total normal wind pressure = 11,250 lbs.

Scale for stress-diagram 8,000 lbs. = 1 inch.

6.—Design the rafter and tie-rod of the above truss.

Safe crushing strength of wrought-iron = 5 tons per square inch.

„ tonnage „ „ „ = 7 „ „ „

No. 20—TRANSVERSE STRAIN AND STABILITY OF STRUCTURES.

2nd year Students omit Questions 2 and 5.

1st year „ „ „ 7 and 9

1.—Design the scantling of sfl beams to support a flat roof weighing 120 lbs per square foot, the beams being 4 feet apart from centre to centre and of 15 feet span. The weight of the beams is to be considered. Sfl weighs 65 lbs. per cubic foot.

Take $p_s = 800$, $s = 8$, $d = b \sqrt{3}$.

2.—Draw the Bending Moment and Shearing Stress diagrams for a supported beam of 36 feet span under a load which is uniform and of $2\frac{1}{2}$ tons per foot run from the left support to a distance of 12 feet from that support, and which is uniform and of $\frac{1}{2}$ ton per foot run for the rest of the span.

3.—Calculate the Bending Moment and Shearing Force at every 5 feet of the above beam.

- 4.—A rolled iron beam of I-section, of which the figure shows the dimensions in inches, is to be used as a cantilever projecting 10 feet horizontally from the support. What concentrated load can it safely bear at its free end, taking the safe working stress of wrought-iron in compression to be 4 tons per square inch.



- 5.—Explain the principles of three methods by which large wrought-iron girders may be designed.
- 6.—In a road project a stream renders necessary a bridge of 40 feet span. The roadway is to be 20 feet wide and is to be carried on two wrought-iron plate girders, the heaviest load likely to occur being $\frac{1}{2}$ ton per foot run of dead load and 120 lbs. per square foot of live load. Design as far as you can, a suitable form of girder.

- 7.—The figure represents a dam wall at Poona. It is of masonry rubble of 150 lbs. per cubic foot. The total vertical height is 100 feet, thickness at base 60 feet 9 inches, at top 13 feet 9 inches. The face *ab* slopes 5 feet in 100 feet, and the face *cd* 42 feet in 100 feet. Its foundation is 7 feet deep, but assume that the water presses against the entire height. Compare (i) the moment of stability of the wall, and (ii) the maximum pressure on the earth foundations, according as the water were made to press against the face *ab* or against the face *cd*.

- 8.—Explain the application of the equilibrium polygon to the problem of enquiring into the stability of a given arch ring, and show that this polygon is actually a Bending Moment diagram.

CIVIL ENGINEERING.

No. 4.—MATERIALS AND CONSTRUCTION.

- * *N.B.*—Engineers Class, 2nd year, to omit Questions 3 and 7
Upper Subordinate Class to omit Question 10.

- 1.—In opening a quarry, why should the surface stone be rejected? What natural features will indicate whether the stone can be quarried?

by wedges? Define "the line of least resistance," and how should the blasting charge be proportioned to this line?

3.—Why does pure lime not make a good cement? What substance is usually added to it in India to form mortar? Name the commonest kind of limestone used in Upper India for the manufacture of building mortar, and state why it is so suitable for this purpose.

3.—What is the essential quality of a good foundation? How would you ensure this result in a building whose walls are of varying heights? Are circular walls to be preferred to rectangular blocks for foundations, and if they are, state why.

4.—What should be the minimum thickness, at the crown, of an arch having a span of 40 feet and rise of 8 feet? Name and sketch the bond you would use in constructing it. Why should the string courses of an oblique arch not run parallel to the faces of its abutments? State and show by a sketch of the intrados how they should be laid.

5.—Give a skeleton sketch of a single king-post truss. Name its various parts, state the strain each is subjected to, and give sketches of the joints.

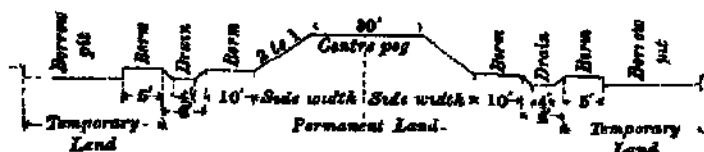
6.—What are the two chief points to be attended to in designing the centering of an arch? Give a skeleton sketch of a trussed centre for a span of 40 feet without intermediate supports.

7.—What is a fished joint, and a scarf? When should each be used? Give a sketch of the best description of scarf you know to resist transverse strain, using only one fish-plate.

8.—Given the cross section of a road as below, fill in the remaining columns of this field-book, and calculate the area of permanent and temporary land respectively to be taken up, assuming that the centre pegs are 330 feet apart, and that the soil from the drains and borrow pits, both 12 inches deep, will just suffice for the embankment.

Height of centre peg.	Each side width.	Each borrow pit.	Width of Land.		Height of centre peg.	Each side width.	Each borrow pit.	Width of Land.	
			Perman-ent.	Tempor-ary.				Perman-ent.	Tempor-ary.
000					300				
125					225				
250					100				
375					000				

Cross Section.



9.—How should the earthen dam of a reservoir be protected against filtration, percolation, and wave-wash, and why? Illustrate your answer by sketches.

10.—What is the difference between a retaining wall and a breast wall? A rectangular retaining wall is 10 feet high, the earth is flush with the top and horizontal, angle of repose 30° , weight of masonry 150 lbs. and earth 120 lbs. per cubic foot, what should the thickness be to just withstand the pressure?

No. 11.—SPECIAL CONSTRUCTION.

N.B.—Engineer Class to do Questions 5 to 12

Upper Subordinate Class to do Questions 1 to 9.

1.—Describe how you would set to work to put a flat roof on a building, say 20 feet clear span, with the following materials —

Logs of wood 15 feet long, 10 inches diameter.

Round iron $\frac{3}{4}$ inch diameter. Flat iron $4" \times \frac{1}{4}"$.

Materials for concrete. Tiles 1 inch thick 1 foot square.

And all necessary carpenter's and smith's tools

Make a rough hand sketch, about 2 feet = 1 inch, of a section of roof to illustrate your description.

2.—Make a hand sketch showing section through a verandah roof, scale roughly 2 feet = 1 inch.—

Foundations, concrete, 6 inches thick.

Bottom of concrete 3 feet below ground level.

Inner wall, brickwork, $1\frac{1}{2}$ bricks thick

Outer wall (to 1 foot above ground level) brickwork for pillars to rest on, $1\frac{1}{2}$ bricks thick.

Stone pillars and bases. Height of plinth 1 foot above ground level.

Floor of verandah, stone on concrete.

Roof supported on collar beam trusses carrying purlin, pole-plate (at outer foot of truss) and common rafters, covered with battens and double Allahabad tiles.

Principal rafters of truss, $8\frac{1}{2}'' \times 2\frac{1}{2}''$.

Purlin on ridge of truss, $7\frac{1}{4}'' \times 5''$.

Common rafters, $5\frac{1}{2}'' \times 8\frac{1}{2}''$.

Bressummer between pillars, $6'' \times 4''$.

Tie-rod, $\frac{3}{4}''$ diameter.

Height of pillar from floor to bottom of bressummer 8 feet.

Slope of roof $\frac{1}{2}$.

Show section of clerestory window in main wall above verandah roof. Write on all dimensions given and such others as you think necessary for a working drawing.

3.—Give a general narrative account of the method employed for the maintenance and repairs of a metalled road, say 200 miles long, i.e., give usual size of gangs, times of repair, method of stone collection for annual repairs and petty repairs, &c., &c., consolidation, &c., &c.

4.—Make a hand sketch showing the section of a hill side road, to be half in excavation and half in embankment. Slope of hill side $\frac{1}{2}$. Road 18 feet wide including inside drain and parapet wall.

5.—A river bed is $1\frac{1}{2}$ miles wide (mostly dry during hot season); describe the method employed for bridging this—the waterway being reduced to say $\frac{1}{4}$ of whole width. Illustrate, by means of a sketch, and give your reasons for employing the various embankments, dams, &c., &c.

6.—In the case of large railway bridges with foundations in sand, what form of foundation and protection to same would you employ—

(1). If decided to have deep foundations?

(2). " " " shallow " ?

7.—You are in charge of a road in which there is a brick bridge some 200 feet long with 20 feet spans. The foundations of the piers are wells sunk 15 feet below bed level of stream in sand. The sand has a stratum of clay 6 feet thick, commencing 12 feet below bed level. One of the central piers has sunk 6 inches, badly cracking the arches on each side. What steps would you take to repair the bridge and prevent further damages in future?

8.—What are the different kinds of materials used for ballast on the formation level of railways? Why is ballast employed? How is it laid, and what precautions should be observed in laying on hard and soft formation beds?

9.—Describe, by means of a rough sketch, the various parts of a railway point for switching a train from one set of rails to another.

Also draw a rough plan showing the shape of a set of points and crossings to enable a double line of rails to branch off from a double line at say an angle of about 85° .

10.—Describe generally the construction and characteristics of Inundation Canals. What improvements are they generally open to? What are the usual difficulties to be found at their heads and how counteracted? What are the advantages and disadvantages of head sluices for these canals? If adopted where are they placed, and for what reasons?

11.—Name the three principal ways in which drainage of the surrounding country is dealt with in the construction of large canals, such as the Ganges Canal. Describe one of them in general detail.

12.—Name the four main operations connected with an irrigation delta project. Give in general terms the method of procedure in designing a delta scheme.

NO. 25 — ESTIMATING.

SPECIFICATION.

Take out the quantities of the various sub-heads shown in the Abstract in the order of their numbers. The whole of the doors, windows and arched openings to be deducted in full from the superstructure masonry.

1.—*Excavation of Foundations*.—The trench will be of the same width as the concrete in foundations

2.—*Concrete in Foundations*.—To be taken out according to the plan.

3.—*Pucka masonry of Foundations and Plinth*.—To be taken out according to the plan. Plinth $1\frac{1}{2}$ feet high

4.—*Superstructure*.—Portions of the plan before you are shaded to show that these parts are intended to be pucka, the remainder of the superstructure to be of kucha-pucka masonry. Ignore this and take out the whole superstructure in one sub head as pucka masonry.

All arches are semicircular, and the springing line is 6 feet above the plinth.

Pillars to be taken as rectangular in section 18" x 14".

Disregard ornamental projections.

5.—*Roofing*.—Take out the area in superficial feet. Dimensions being taken from inside to inside of parapets.

6.—*Flooring*.—This comprises the areas of all the rooms, plus doorways (less 3 inches wide for each sill), plus verandah openings to outer edge of plinth

7.—*Doors and Windows*.—These will be calculated on the areas of the openings in the walls, which will include the cost of chokuts.

8.—*Cornice*.—Take this out in running feet.

ABSTRACT.

1. C. ft. Excavation of foundations, ...	@	Ra. -	8/-	per	%	=
2. " Concrete foundations, ...	"	"	10/-	"	"	=
3. " Pucka masonry foundations and plinth, ...	"	"	20/-	"	"	=
4. " Pucka masonry superstructure, ...	"	"	24/-	"	"	=
5 S. ft Roofing arched, including cen- tering, ...	"	"	85/-	"	"	=
6. " Flooring, ...	"	"	12/-	"	"	=
7. " Doors and Windows, ...	"	"	1/8	per	s. ft	=
8. R. ft. Cornice, ...	"	"	22/-	"	%	=

Contingencies, @ 5 per cent.

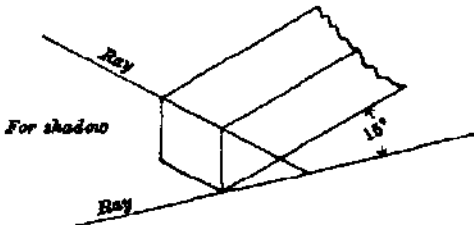
No. 24.—MECHANISM.

1.—A pump 10 inches diameter and 15 inches stroke double acting, the crank by which it is driven making 30 revolutions per minute. Find the tons of water delivered per hour if the pump is three quarters full each stroke.

2.—Water is rushing out of a tank through a rivet hole having half a square inch area, at the velocity of 20 feet per second. How many tons is this per hour?

3.—Make sketches of blocks and tackle, in which the gain of power in lifting will be (3), (5) and (8) respectively.

PLAN.



4.—Sketch the arrangement of change wheels on a lathe for cutting (1) a right hand screw, (2) a left hand screw.

5.—Can you point out any peculiarity in the motion of the connecting rod in an ordinary horizontal steam engine?

6.—Sketch some of the common methods of making longitudinal boiler seams.

7.—How many studs 1 inch diameter are required for a cylinder cover 50 inches diameter, the pressure being 54 lbs. and the strain per square inch of section of studs is not to exceed 3,000 lbs.?

8.—Make a sketch of a ratchet wheel which may be used to drive a screw in either direction.

9.—If a shaft 3 inches diameter will transmit 24 H.-P. at 100 revolutions per minute, what diameter of shaft will transmit 16 H.-P. at 150 revolutions per minute?

10.—Make a sketch of a fly press and describe the construction and action of the same, using letters of reference. State the purposes for which it may be used. Mention any modification of construction suitable for different purposes.

Nos 33 and 34.—DRAWING.

Engineer and Upper Subordinate Class, 2nd year, to do Nos. 1 and 2

" " " " 1st " " " 2 and 3

Lower Subordinate Class, 2nd year, to do No. 4.

1.—A water pipe passes through an embankment as shown in sketch, *Fig. 1*. Draw half plan showing intersection of surface of slope with the surface of the pipe, also a front elevation of the same.

Scale, 3 feet = 1 inch.

2.—Make a finished colored drawing in isometrical projection of the king-head, showing joining of the principal rafters, as given in plan, *Fig. 2*. Corner A to the front, and rafter B moved out 2 inches to show tenon and mortise.

Scale—4 inches to 1 inch

(2nd year Students to put in shadow, ray of light as given in sketch).

3.—A hexagonal prism, 4 inches long and $\frac{1}{2}$ inch side, rests with one

edge of an end on the horizontal plane and axis of prism at angles of 30° and 45° (right) in the horizontal and vertical planes of projection respectively. Draw full size the projection of the prism on both planes of projection, also a sectional elevation to the right, on a vertical plane at right angles to the vertical plane of projection, and bisecting the axis of the prism.

4.—Make a colored tracing of the section of a verandah given you.

Note.—For a complete tracing, marks will be allowed for neatness and clarity

No. 6.—SURVEYING.

Engineer Class, 2nd year, to do questions 5, 6, 7, 8, 9

" " 1st " " " 3, 4, 5, 6, 7

Upper Subordinate Class, 2nd and 1st year, to do questions 1, 2, 5, 6, 7

1.—What is the object of a vernier, and what of a comparative scale?

Construct a scale of 6 miles to the inch, to read miles and furlongs, and a comparative scale of Russian versts. (1 verst = 1166.68 yards).

2.—Give the permanent adjustments of the Y-level, with brief explanations.

3.—In order to open it up with roads and canals, you are to survey the valley of Kashmir, with the mountains enclosing the valley. The valley is generally level, much watered, with few roads. Lower slopes of hills undulating and wooded, mountains above abrupt, rugged and with well defined peaks.

There are a good many well marked features in the valley.

Give a list of the instruments, &c, you require for the survey, stating the class of work for which they are required.

4.—State what parts of the survey (in 3) require great accuracy, and what general correctness only. What errors must you guard against, and what checks would you make?

5.—What are bench-marks, and how are they selected, and marked, at what intervals should they be?

How can you eliminate cumulative errors in a long line of levels?

6.—The following are the inward angles of a traverse, and the distances measured —

Angles A	= 250° 15'	Sides AB	= 5120
" B	= 73° 50'	" BC	= 5161
" C	= 98° 28'	" CD	= 6400
" D	= 127° 20'	" DE	= 5239
" E	= 98° 32'	" EF	= 4920
" F	= 71° 37'	" FA	= 3868

The bearing of AB = 136° 15'.

Make out the traverse table, and apportion the errors.

7.—Plot a road descending from A to B on the attached contoured plan* having a slope not exceeding $\frac{1}{15}$.

8.—A curve of deviation is required on a railway to avoid a building. How do you lay it out, and what checks do you apply?

9.—Explain the difference between a solar and a sidereal day; also between sidereal and mean time.

How can the longitude of a place be deduced from the motion of the moon in Right Ascension, and the motions of moon-culminating stars?

No. 22.—EXPERIMENTAL SCIENCE.

2nd year Students omit question 9.

1st " " questions 10, 11, 12.

1.—Show how the two opposing forces of cohesion and heat determine the three conditions of matter—solid, liquid and gas. A gas contracts in volume when cooled, is this at all analogous with the same fact in liquids and solids?

2.—Describe an experiment which shows that liquids, on solidifying, evolve heat. Why is it difficult to show this in the case of water?

3.—What is a crystal, and by what processes may substances be generally crystallised?

4.—Describe the laboratory preparation of hydric sulphide. Mention its properties, enumerate the basic radicles which are precipitated from solutions of their salts by it in the presence of hydric chloride, and describe the nature of the precipitate so formed.

* Not reproduced

5.—Enumerate the chief properties of copper and of five of its useful alloys with other metals, stating roughly the proportions of the different metals forming the alloys.

6.—A calorimeter weighing 150 gm., and made of silver of specific heat 0.056, contains 350 gm. of water at 8°. If 10 gm. of steam at 100° is passed into the water, what will be its final temperature, supposing no heat to be lost or gained?

7.—How are the following three acids obtained —Hydrochloric, Hydrocyanic, and Hydrofluoric, and how much of each acid will be obtained from 800 gm. of the material from which each is made?

8.—Give a short account of the elements Boron and Silicon, and the compounds they form with oxygen and fluorine.

9.—Describe the chief ores of iron, and mention the difference in properties and composition between the principal varieties of iron and steel, giving in detail the process of conversion of cast into wrought-iron.

10.—Distinguish between the Indicated Horse-Power and the Brake Horse-Power of a steam engine, and describe generally the instruments by which both may be ascertained.

11.—Define the following —Dew-point, complementary colour, chromatic aberration in a lens, coercive force in a magnetic substance, electromotive force, electro-chemical equivalent.

12.—What conditions are necessary to the efficiency of a lightning conductor as regards (a) the point, (b) the sectional area, (c) the connections, (d) the earth plate? What faults might you expect to find in a conductor which you are ordered to test and inspect after it has been neglected for several years?

UPPER SUBORDINATE CLASS.

ARITHMETIC,	} of Engineer Class.
GEOMETRY, ...	...	...	...	...	...
TRIGONOMETRY, ...	...	...	...	...	...
MENSURATION, ...	...	...	...	...	...
MATERIALS AND CONSTRUCTION, ..	...	...	...	...	...
SPECIAL CONSTRUCTION, ...	...	...	...	...	...
ESTIMATING, ...	...	...	...	...	...
MECHANISM, ...	...	...	...	...	...
SURVEYING, ...	...	...	...	...	...
DRAWING, ...	...	...	...	...	...

MATHEMATICS.

No. 2.—ALGEBRA.

1.—Multiply—

$$x^3 - 4x^2 + 11x - 24 \text{ by } x^2 + 4x + 5.$$

2.—Divide—

$$x^3 + y^3 + 3xy - 1 \text{ by } x + y - 1.$$

3.—Find the G. O. M. of—

$$6x^3 - 4x^2 - 11x^2 - 8x^2 - 8x - 1$$

and

$$4x^4 + 2x^3 - 13x^2 + 8x - 5$$

4.—Find the square root of—

$$(1). \quad 25x^4 - 30ax^3 + 49a^2x^2 - 24a^3x + 16a^4.$$

$$(11). \quad 16 + 5\sqrt{7}$$

5.—Simplify—

$$\frac{a+b}{(b-a)(a-a)} + \frac{b+a}{(a-a)(a-b)} + \frac{a+a}{(a-b)(b-a)}.$$

6.—Solve the equation—

$$\frac{a+b}{a+4} - \frac{a-6}{a-7} = \frac{a-4}{a-5} - \frac{a-15}{a-16}.$$

7—A dealer bought a horse expecting to sell it again at a price that would have given him 10 per cent. profit on his purchase; but he had to sell it for £50 less than he expected, and he then found that he had lost 15 per cent. on what it cost him. What did he pay for the horse?

8—A certain sum of money is to be divided among a certain number of men; if there were three men less each man would have £150 more, but if there were six men more each man would have £120 less. Find the sum of money and the number of men.

9—Solve the equations—

(i). $12x^2 = 29x - 14$.

(ii). $8x^3 - 2ax - bx = 0$.

10—A and B are two stations 300 miles apart. Two trains start simultaneously from A and B, each to the opposite station. The train from A reaches B 3 hours, the train from B reaches A 4 hours after they meet find the rate at which each train travels.

No. 9.—APPLIED MECHANICS.

1.—The length of an inclined plane is 15 feet, the perpendicular height 8 feet what power will be required to sustain a weight of 1 cwt?

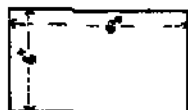
2.—If the distance between the threads of a screw be $\frac{1}{4}$ inch, and a force of 100 lbs. be applied to the end of a lever 3 feet in length, what weight will be moved by the screw?

3.—In a wheel and axle the barrel is 3 inches diameter, the rope is $1\frac{1}{4}$ inches diameter, the crank handle is 14 inches radius, and the weight to be lifted is 300 lbs. what is the force applied to the handle, adding 10 per cent. for friction?

4.—What is the pressure on this arrangement, W being = 63 lbs.

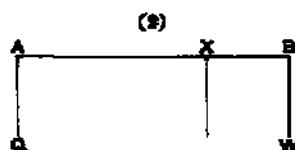
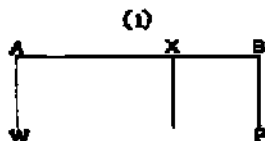


5—These figures represent cross sections of the same beam in two different positions. Give the relative strength.



6—A punching machine is so arranged that 7 holes can be punched in 3 minutes through a plate $\frac{1}{2}$ inch thick. The pressure required is 20 tons, which we may assume as uniform. Find how much work is performed by the machine in one minute and the horse-power required.

7.—Let AX be the long arm of a beam, and BX the short arm. A weight W placed at A is balanced by 336 lbs. = P placed at B , but when W is placed at B it is balanced by 296 lbs. = Q placed at A ; what is the exact weight of W ?



8—A tank is 9 feet 6 inches \times 2 feet 5 inches and contains 1,000 gallons of water: what is its height?

ANNUAL REPORT, 1897.

To

THE SECRETARY TO GOVERNMENT,

N.-W. PROVINCES AND OUDH,

EDUCATIONAL DEPARTMENT.

Roorkee, 25th March, 1897.

Sir,—I have the honor to submit the Annual Report of the working of Thomason Engineering College.

2. **RE-ORGANIZATION**—The Students now leaving the College have had the advantage of only two years' professional education, but it is satisfactory to be able to state that practically all the rules for the re-organization have been passed by the Committee and received the sanction of Government, all the new Classes will have made a fair start in November, 1898, just 50 years since this College was founded.

Although the rules, courses of instruction and general arrangements for the various Classes have been fixed, and the accommodation in the College building provided, a good deal yet remains to be done before the Students can be fully instructed. Neither of the two Professors sanctioned by the Secretary of State has as yet reported his arrival in this country, and sanction to the construction of the College Workshops and Laboratories is still required. The estimates for all these works have been submitted in full detail, with the exception of the shed for the Workshops.

It may be noted here that both the Bilpur and Madras Colleges have been equipped recently by Government in a most liberal spirit with the apparatus necessary for Technical training, and that the Poona College of Science has enjoyed these advantages for a considerable period.

3. **COMMITTEE OF MANAGEMENT**—The Committee held two Meetings during the year under review, *viz.*, on the 5th June, 1896, at Naini Tal, and on the 12th December, 1896, at Allahabad.

4. CHANGES IN THE STAFF OF THE COLLEGE—*Engineer Staff.*

Lieutenant H. L. Crosthwait, R.E., 2nd Assistant Principal, availed himself of one year's furlough on Medical certificate from 24th October, 1896, and his services were placed at disposal of the Government of India, Military Works Department, from that date.

Lieutenant H. B. D. Campbell, R.E., Assistant Engineer, 2nd Grade, Military Works, joined the College as Officiating 2nd Assistant Principal on the forenoon of the 19th November, 1896.

Upper Subordinate Staff.

Conductor J. O'Neill, 2nd Assistant Master returned from furlough on the 19th October, 1896.

Mr. O. G. Sullivan, Head Master of the Thomason College, retired on 1st November, 1896.

Captain J. H. Fairley, 1st Assistant Master, was promoted to Head Master.

Conductor J. O'Neill, 2nd Assistant Master, was promoted to 1st Assistant Master.

Sergeant C. Bolton, Overseer, 1st Grade, and Officiating 2nd Assistant Master, was appointed permanently as 2nd Assistant Master. Sergeant Duncan and Mr. Plomer, Apprentice Overseers, were 3rd and 4th Assistant Masters, respectively, up to 15th September, 1896, and their places were taken by Sergeant Gyde and Sergeant Francis, Apprentice Overseers, respectively, after that date. Sergeant Gyde, Apprentice Overseer and Assistant Master, was posted to the Military Works Department, Lebong, from 16th March, 1897, and Sergeant Francis has been permanently appointed as 3rd Assistant Master from 1st April, 1897.

Lower Subordinate Staff.

The services of Lala Chetna Das, temporary 4th Assistant Master, were dispensed with on 1st August, 1896. Abdul Hamid was promoted to 4th Assistant Master from 19th October, 1896.

Mahommed Latif, Assistant Master, was transferred to Patna Survey School in August, 1896, and Lala Ajudhia Nath was appointed as 5th Assistant Master on probation on 19th October, 1896.

Dhani Ram, 7th Assistant Master, resigned his appointment from 16th June, 1896.

Survey Classes.

Sergeant J. H. Sheppard, 3rd Bn. Rifle Brigade, and Honorary Duffadar Jehangir Khan, 1st Bengal Cavalry, were appointed Instructors of the British and Native Military Survey Classes, respectively.

Industrial Class.

Sadhu Singh was appointed as Instructor, Art Handiwork, Section III, on 3rd March, 1897.

Press Staff.

Sergt. G. F. Sheath was appointed Printer and Reader and joined on the 4th July, 1896.

3. CASUALTIES.—There were no casualties during the year.

6. REMOVALS.—There were no removals during the year. One Civil English Upper Subordinate Student, Mr. A. E. Lumsden, resigned the Class on 29th June, 1896, before he had completed three months' study; he had joined as an unprivileged Student paying fees, and desired to attempt the competition in which he has succeeded.

7. ENTRANCE EXAMINATIONS.—The details of the Entrance Examinations for Students joining on the 1st April next, and the present strength of the College, are shown in the following Table:—

Statement showing the number of College Students, &c.

	CIVIL.		MILITARY.		TOTAL.	
	English.	Native.	English.	Native.	Of each.	In residence.
ENGINEER CLASS.						
Second year Students,	9	6	..	..	15	15
First " "	18	8	..	..	26	18
Candidates examined for next year, ..	10	13	..	..	23	..
passed,	4	7	..	..	11	..
admitted, privileged, ..	4	7	..	..	11	..
" unprivileged, ..	1	12	..	..	13	..
Carried forward, ..	41	55	..	..	96	58

Statement showing the number of College Students, &c.—(concluded).

	CIVIL		MILITARY.		TOTAL.	
	English.	Native.	English.	Native.	Of each.	In residence.
Brought forward, ..	41	55	..	..	96	83
UPPER SUBORDINATE CLASS.						
Apprentices on Works,	4	2	9	..	15	..
Second year Students,	7	7	8	..	22	23
First year Students,	8	9	8	..	25	24*
Candidates examined for next year, ..	10	75	14	..	99	..
" passed,	8	45	13	..	66	..
" admitted, privileged, ..	6	6	19	..	31	..
" " unprivileged, ..	1	5	..	..	6	..
LOWER SUBORDINATE CLASS.						
Second year Students, .. ..	..	42	..	..	42	42
First " " unprivileged, ..	..	24	..	..	24	24
Candidates examined for next year, ..	..	151	..	..	151	..
" passed, .. ..	..	99	..	..	99	..
" admitted, privileged, ..	..	40	..	..	40	..
" " unprivileged, ..	..	15	..	..	15	..
MECHANICAL APPRENTICE CLASS.						
First year Students, .. ..	..	9	..	..	9	9
INDUSTRIAL CLASS.						
First year Students—						
Section I Printing trade, ..	..	2	..	..	2	2
" II. Photography and Photo-Mechanical work, ..	..	2	..	..	2	2
" III Art Handiwork, ..	..	3	..	..	3	3
MILITARY SURVEY CLASS.						
Students, .. ..	..	..	6	10	16	16
JUNIOR CIVILIAN SURVEY CLASS, ..						
Grand Total, ..	85	591	72	10	758	179

* One Civil English Student left.

† Will be increased to 15.

Civil English and Native Candidates from 1880 to 1896.

Provinces or Administrative	Came up for Examination.			Passed the Examin.			Passed the Final Examination.			Total of all classes			Remarks.
	English.	Upper Subordinate.	Lower Subordinate.	English.	Upper Subordinate.	Lower Subordinate.	English.	Upper Subordinate.	Lower Subordinate.	Came up.	Passed.	Passed out.	
N.W. Provinces and													The figures for passed and do not include the year 1880 as the candidates were in England, and the figures for failed are caused by about 80 to 100 who have the proper preparation. Special Classes are not included in this statement.
Quah, ..	302	544	1,098	179	189	515	111	134	211	1,945	848	445	
Punjab, ..	142	416	1,267	69	108	686	37	69	300	1,825	788	458	
Bengal, ..	83	46	1	27	9	...	31	8	..	180	38	29	
Bombay, ..	6	1	...	4	...	...	3	..	...	9	4	8
Madras, ..	6	3	...	1	...	...	1	..	..	9	1	1
Central Provinces, ..	9	12	7	...	1	2	...	1	1	21	3	2	
Burma, ..	2	...	...	...	...	...	...	...	...	2	...	...
Assam, ..	...	4	...	...	...	...	...	...	...	4	...	...
Central India, ..	...	2	1	...	...	...	...	...	...	3	...	...
Rajputana, ..	...	9	1	...	1	...	...	...	...	10	1	1
Baluchistan, ..	...	1	4	...	...	3	...	...	...	5	3	...
Native States, ..	3	54	276	2	8	145	...	...	4	388	155	79
Private, ..	2	6	...	...	1	...	...	1	...	8	1	1
England, ..	3	...	...	...	...	...	...	...	...	3	...	...
Total,	657	1,098	2,406	965	289	1,301	173	208	537	4,311	1,643	908	

8. **CONDUCT OF THE STUDENTS.**—I am glad to be able to report that the conduct of the Students during the year has been all that could be desired. There was one case of anonymous petition regarding the Mechanical Apprentice Class, and I would recommend great care being exercised regarding the moral character of the boys selected for this and the Industrial Classes from among the residents of a large city like Lucknow.

9. **THE TECHNICAL TRAINING OF CIVIL ENGINEERING AND TELEGRAPH STUDENTS** has already been referred to in para. 2. All Students are trained in Ferrotypa, a limited number in Photography, and the Engineer Class in Chemistry with some difficulty, as there is no Students' working laboratory. All Students visit the Canal Foundry and make notes on the work being carried on there.

10. **MECHANICAL APPRENTICE CLASS.**—This new Class was started on the 30th November, 1896, under the sanction conveyed in G.O. No. ⁴⁴⁹ ~~XV.413-1~~, dated 12th August, 1896. The Students were all selected by the Director of Public Instruction from the Industrial School, Lucknow. They are given a training in Theory and Drawing at the College, and in Practical work at the Canal Foundry under the orders of the Superintendent. The Students who have joined do not seem likely to be able to work up to the standard of theoretical knowledge necessary for Foremen Mechanics, and it will probably be necessary to introduce an Entrance test in the future; the present system will, however, be given a fair trial before this course is recommended.

11. **INDUSTRIAL CLASSES.**—Three Classes have recently been started under the sanction contained in G.O. No. ⁷¹⁵ ~~XV.413-2~~, dated 22nd December, 1896, viz., in the Printing trade, in Photo-Mechanical Work and in Carving. The full number of Students for these Classes has not yet been entertained: great care has to be exercised in making selections so that the Students may be well suited to benefit by the special instruction given to them. These Classes should afford an opening for the most promising Students of the Provincial Industrial Schools and educated Natives with tendencies for scientific pursuits.

12. **SPECIAL CLASS.**—A Special Class of Non-Commissioned Officers and Men for the Mombasa-Uganda Railway was held under the sanction conveyed in Government of India, No. 546, dated 17th February,

1896. *Eleven* men, who had all previously passed through the Native Military Survey Class Course, were trained in Railway survey and levelling by the 8th May, 1896, and *eight* of them were despatched to Uganda, where I understand they have given satisfaction. The training was efficiently and rapidly carried out by Pandit Baldeo Prasad, Head Master, Lower Subordinate Class and his Assistants, without any interference with their regular duties.

It is probable that men trained in this manner might be found very useful on the Indian Frontier Expeditions.

18. **BRITISH MILITARY SURVEY CLASS.**—This Class of *eight* Non-Commissioned Officers joined in September, 1896, and their Course of instruction has been carried out by Sergeant Sheppard under Captain Bullen, R.E.

The Course laid down for their instruction was the same as that of last year, but for various reasons the combined Hill Sketch, which is the most difficult exercise in the Course, was not completed, nor was its main object carried out, in finding and reporting on a route over the main Siwalik range which would be passable for troops. It is to be hoped, though, that the men have learnt from their failure how such a sketch should be executed if it ever comes to be required of them.

The conduct of the Class has not been quite so satisfactory as is generally is, and there have been several complaints brought by the men against one another, but there was a marked improvement towards the end of the Course, and I am satisfied that the tone of the Class is good, and that the men will be found efficient at their work.

14. **NATIVE MILITARY SURVEY CLASS.**—This Class joined in June 1896, and completed the Course at the end of March.

Two test examinations were held during the Course—one in November and the other in January—and I am glad to say that the latter showed that marked improvement had been made in the interval.

The teaching and practice in contouring is found to be a difficult matter with this Class, and I am afraid the instruction given is not so good as when one of the Assistant Masters of the College was responsible for it.

Out of a Class of *ten*, *eight* have obtained Higher certificates and *two* Ordinary, so that in this respect the Class compares favourably with those of former years.

The conduct of the Class was good with the exception of one man

who on learning the result of the examination was insubordinate to the Instructor and had to be remanded under arrest to his Regiment

15. **PHOTOGRAPHY AND FERROTYPY.**—The Second Year Students of all Classes have been trained in Ferrotypy, and *System* men in Photography as below :—

Engineer Students,	..	..	.	6
Upper Subordinates,	..	..	..	6
Lower	„	..	..	3
				<hr/>
				15

The work of the Engineer Class was fair. This class this year had little or no time to devote to Photographic work in the cold season as they had a heavy Project to prepare. Mr. Hari Prasad Vidyant obtains the prize. The work of the Upper Subordinate Class was very good, and considerable difficulty was met with in awarding the prize, which is gained by Sergeant C Hayles. The work done by both Sergeant J. J. Evans and Sergeant F. A. Brining was highly commended by the Committee. The work of the Lower Subordinate Class was fair.

Sergeant Bolton instructed the Students until relieved by Mr. O'Neill in October, 1896, the work produced is, I consider, most creditable to the Instructors.

The Photographic Department carried out a large amount of work during the year, including Silver Bromide and Platinotype prints, Bromide enlargements and Photo-mechanical work. The Photo-Litho. Branch with the Operator, Munshi Jaffr Ali, was transferred to the Press on the 1st January, 1897. The supervision of the Technical details still remains under the Instructor in Photography. A special report on this Department has been called for by G. O. No. ⁹⁰ XV.—785, dated 18th March, 1897.

16. **OUTRIDER EXAMINATIONS.**—The statement given below shows the work done in Outrider Examinations by the College Staff. The following gentlemen kindly assisted the Staff.—

Mr. E. A. Kendall, I.C.S., Major F. G. Bond, R.E., Major M. C. Barton, R.E., Rev. H. Höppner, Pandit Adityaram Bhattacharya, Maulvi Sayed Anjad Ali, Lieut. D. M. Griffith, R.E., Mr. D. Souter Robertson, and Mr. P. C. Mole.

TEST FOR	1904		1905		1906	
	Candidates	Passed	Candidates	Passed	Candidates	Passed
Assistant Examiner of Accounts,	14 ¹	12	13 ²	9	10 ⁴	3
Traffic Department,	8	8	..	..	16	9
Sub-Engineer, .. .. .	..	..	2	..	1	1
Overseer, .. .. .	..	..	..	..	..	..
Promotions to Accountant, 2nd Grade,	7	6	6 ³	3	3	3
4th Grade Accountants,	184	7	124	17 ⁵	150 ⁶	17 ⁷
Finance and Commerce Department,	18	8	..	..	..	..

17. REGISTER OF MEN OUT OF EMPLOY.—The number of men registered and provided with employment is given below —

Grade.	1900-01		1901-02		1902-03		1903-04		1904-05		1905-06		1906-07		Remarks
	Registered.	Appointments found	Registered.	Appointments found	Registered.	Appointments found	Registered.	Appointments found	Registered.	Appointments found	Registered.	Appointments found	Registered.	Appointments found	
Engineers,	11	5	9	6	9	8	10	8	12	8	12	8	16	2	
Upper Subordinates,	22	12	27	10	16	7	24	11	10	4	13	1	11	12 ¹	
Lower,	110	63	92	57	148	82	131	110	161	100	151	123	140	121	
Draftsmen,	28	12	7	7	8	1	8	2	11	8	13	11	15	5	
Mistria, .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	2	6 ²	
Total,	171	92	135	80	181	97	163	131	190	117	189	151	184 ³	143	

Very careful enquiries are made into the characters and qualifications of men before they are registered, and it is probable that no really unsatisfactory men get taken on the Register.

The printing of the records of Candidates at their own expense has been continued with satisfactory results.

¹ One withdrawn.

² Two withdrawn.

³ One did not appear.

⁴ One of these Candidates was examined in Book-keeping only, side Accountant General's No 11783, dated 1st July, 1906.

⁵ Two did not appear.

⁶ Three withdrawn.

⁷ Four of these Candidates were examined in Book-keeping only.

⁸ In addition 12 men obtained appointments direct.

⁹ Some Lower Subordinates obtained appointments on the Uganda Railway as Overseers.

¹⁰ One Candidate from Sub-Overseers registered last year, two Mistria obtained temporary Sub-Overseer appointment.

Register showing Applications and Appointments of Men during 1895-97, excluding Guaranteed Appointments.

Grade.	N. W. Freeman and Clerk.			French.		Local Administration.								Total.	Remarks.					
	Railways.	Military Works.	Particulars.	Irrigation.	Municipal and District Board.	Fiscal.	Irrigation.		Municipal and District Board.	Bungal.	Booby.	Madras.	Burma.			Assam.	Central Provinces.	Rajasthan and Central India.	Myderabad.	Coorg.
<i>Applications from Employers.</i>																				
Engineers,	1	..	..	..	..	..	1	1	1	1	1	..	..	1	..	..	..	..	2	10
Upper Subordinates,	16	..	1	1	..	..	1	3	4	3	..	1	3	..	3	..	..	..	11	46
Lower "	87	11	93	31	13	14	28	5	13	4	..	7	14	16	3	..	..	..	48	366
Draftsmen,	9	1	8	..	..	..	3	1	1	..	..	2	8	..	..	..	..	..	1	35
Minors,	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	3
<i>Appointments made.</i>																				
Engineers,	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2
Upper Subordinates,	5	..	1	1	..	1	1	1	1	..	..	..	..	..	..	..	..	..	3	12
Lower "	25	2	12	20	6	4	16	3	3	3	..	4	..	15	1	..	..	..	9	123
Draftsmen,	1	3	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	6
Minors,	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1

From the Register showing applications and appointments of men during 1896-97, excluding guaranteed appointments, it will be seen that there were 866 applications for men and 148 appointments. If suitable men had been available, 228 more appointments might have been made. Part of this high demand was due no doubt to calls for supervision of famine labor, but only a small part, as highly educated men were not largely required on famine works. The demand has come from all parts of India, except Hyderabad (Deccan) and Coorg, and as it appears likely to continue, it calls for a large extension of the College Subordinate Classes.

18. **COURSE OF STUDY.**—No special changes were made as the new three year's Course, which has been sanctioned finally, will be brought into use from the 1st November, 1897. The 1st year Lower Subordinate Class was put through the new Course. It may be mentioned here that opportunity was taken at the time of revision of the Engineer three year's Course, to revise the two and one year Courses of all Classes of the College. The revision of the Manual on Bridges was completed, and it will be issued for the next Course.

19. **VOLUNTARY CORPS.**—The Corps was inspected by Colonel Leach, O.B., D.S.O., R.E., Commanding the Roorkee Station, on the 15th March, 1897, he was pleased to express his fair approval, the Adjutant, Captain Denny, was present. The full number of drills was held, and the Annual Course fired with fair results.

The funds are in a flourishing condition owing mainly to the careful management of Lieut Sparke.

20. **BOATS.**—The Recreation Club is in a prosperous condition, and as the expenditure for the year has been exactly equal to the receipts we have still sufficient balance to buy a new boat, if we could make sure of getting a suitable one sent out from England.

Our Cricket team has been distinctly above the average, and if we had been able to arrange more matches the Club would have found it expensive to provide presentation bats for every individual score of over 50. In the only match we did play there were two such scores. We are very glad to have Sergeant Bolton in the team again.

Though Hockey has been started, it has, up to the present, been confined to the Upper Subordinate Class, who won both the matches they played.

The boat race was won by the 2nd year, by two lengths. This crew,

composed of Loughran, LeCun, Snee, Jones and Dady (cox) also was the race last year as 1st year Students.

The Lower Subordinate Club has prospered; all the members now play football or cricket when their College work allows time for recreation.

The result of the match played is given below:—

Month.	Players.	1st Innings.	2nd Innings.	Total.	Remarks.
Jan 1897, —	Station, 	78	90 (for 1 wicket).		College won by 150 runs.
	College, . ..	253	...		

21. GYMNASIUM.—This has not yet been provided on a scale sufficient for all the Native Students. When funds are available a gymnasium ought to be built and an Instructor provided; a Course being made compulsory for those Students who are not Volunteers or who do not play matches

22. CO-OPERATIVE STORES.—This institution is in a satisfactory position Rs 11,940 worth of goods were sold during the year. Mr. Sullivan, the former Honorary Manager, has been succeeded by Capt. Fairley, who has managed to the great advantage of the members.

23. PRESS.—It is satisfactory to be able to report that the position of the Press has been materially improved this year. With the exception of the pressing and drying room, which will be moved in a month, all the Departments have now been collected into part of one of the College wings, the stores are in a detached building arched and grated. There is only one door for the employes to pass in and out of, and the Superintendent and Printer can properly supervise the workmen in the Press and Composing rooms. The rooms recently built and altered by the Public Works Department are suitable and thoroughly well lighted. An Oil Engine was purchased for power working of the machines, and now runs the new Lithographic registering machine, weighing nearly 8 tons, a converted Double Elephant Lithographic Press and a Harriid's Cylinder type Press. Four other power Presses have been indentd for, and should be fixed in working order by the end of 1897. The installation of this improved plant will enable the Press to cope with the large quantity of high class color and Photo.-mechanical work it is now called on to produce, and which the hand presses were quite powerless to deal with.

The Oil Engine, Hornsby-Akroyd type, appears to be a very suitable source of power for small factories; it is easily managed, requires very little attendance, and as far as can be determined at present, the cost of the power is low, probably not above two annas per B. H. P. per hour.

Some difficulty was met with in training the old Press hands to work the machines; several men are now efficient, and with proper supervision by the staff, little difficulty on this score should be experienced in the future.

Mr. Robey has been in charge as Superintendent during the year—he has had many difficulties to overcome in carrying on the work of the Press during the alterations to the buildings and transfer of plant. Sergt. Sheath, the Printer, has attended to his duties in a satisfactory manner.

24. LIBRARY.—The Library now contains 17,140 Volumes; it is in good order under Mr. Mes's care. A combined Model and Reading room has been added—this will be a great advantage to Students.

Lower Subordinate Students are now allowed to use the Library, the great increase in knowledge of English in this Class rendered this course desirable.

25. MODEL ROOM AND MUSEUM.—The new Model room, which is also used as a Reading room, will afford ample space for models for some considerable time. A few additions have been made to the collection and others have been promised, but there are many useful types still wanting. No additions have been made to the Museum.

The sand model referred to in last year's Report has been under experiment during the year, and the Government of India have recorded their appreciation of the results.

26. HEALTH.—The health of the Students throughout the year has been good.

27. APPRENTICE OVERSEERS.—Fifteen men, including the two Assistant Masters, have been posted as follows:—

Administration				Military, 1st grade	Civil 2nd grade	Mahtra, 3rd grade	Total
Military Works,	..	..	..	6	1	..	6
Assam,	..	..	..	1*	..	..	1
N.-W. Provinces, Provincial,	..	..	..	1*	3	1	4
Railways,	..	..	..	3	..	..	3
Punjab,	..	..	..	..	1	1	2
Total,				9	4	2	15

* Posted to College as Assistant Master.

The Director General, Military Works, asked for another *Military Overseer*, but could not be supplied.

Twenty men passed as Overseers last year, sixteen obtaining the Higher certificate as Sub-Engineers. Out of the twenty who passed, two were appointed Assistant Masters, and thirteen were trained as Apprentices. After six months two of the Apprentices were brought back as Assistant Masters, and the two Assistant Masters sent out for training, so that all the fifteen gaining guaranteed appointments have benefited by a practical training on works.

Of the five men who failed to secure guaranteed appointments, one, a Military Student, was appointed direct by the Director General, Military Works Department, and the other four obtained other appointments.

The Reports on Apprentices by Executive Engineers and Instructors were all most satisfactory; indeed, during the latter part of their training, the Apprentices in most instances appear to have rendered substantial assistance to Divisional Officers on the works on which they were being trained.

28. **MAINTENANCE OF GROUNDS AND WORKSHOPS.**—The grounds have been maintained in excellent order, and Mr. Sparke, who is in charge of the Workshops, has put them on a capital working basis. Accounts of stock, expenditure, and receipts, are carefully kept up in authorized forms under a budget head, and a balance sheet for the year will be submitted this year and for the future with the accounts of the Press and Book Depot.

In addition to the work done by the Shops, a pump for the supply of the sand model casters has been put in at an expense of Rs. 998. This expenditure has been met by the Government of India.

The Clock presented to the College by H. E. Sir Bir Shumsher Jung, Rana Bahadur, K.C.S.I., has been erected by Messrs. Lund and Blockley and keeps good time.

29. **ACCOUNTS.**—The Accounts of the College were transferred from the Department of Public Works to the Accountant General, N.-W. Provinces and Oudh from the 1st April, 1896. Some points of detail require yet to be arranged for, but on the whole the new system appears to work smoothly.

The work of the office this year has been heavy owing to this change in the Accounts system and the working out of the details of the re-

organization Mr. Grogan, the Superintendent, and senior members of the office have given me great assistance.

QUALIFICATION OF STUDENTS AT THE FINAL EXAMINATION.

30. The results are shown in the following tabulated form for comparison with those of previous years.—

Table of Percentage of marks gained.

Year	ENGINEER CLASS						UPPER SUBORDINATE CLASS.						LOWER SUBORDINATE CLASS.					
	2nd Year			1st Year			2nd Year			1st Year			2nd Year			1st Year		
	Highest Marks.	No. Qualified.	Average Marks.	Highest Marks.	No. Qualified.	Average Marks.	Highest Marks.	No. Qualified.	Average Marks.	Highest Marks.	No. Qualified.	Average Marks.	Highest Marks.	No. Qualified.	Average Marks.	Highest Marks.	No. Qualified.	Average Marks.
1872, ..	89	13	61	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1873, ..	80	18	61	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1874, ..	74	13	64	73	13	58	76	82	23	69	77	25	62	..	..	..	..	..
1875, ..	78	17	57	77	13	76	76	82	23	69	77	25	62	..	..	..	..	..
1876, ..	70	18	55	65	10	69	75	22	60	72	25	56	..	..	..	..	..	..
1877, ..	77	11	60	79	14	61	63	25	62	58	27	63	..	..	..	..	..	..
1878, ..	78	14	60	68	13	60	62	29	62	61	31	62	..	..	..	..	..	..
1879, ..	68	11	62	79	9	64	67	15	65	61	16	66	..	..	..	..	..	..
1880, ..	..	..	..	..	..	..	..	..	..	..	..	..	71	23	61	..	..	..
1881, ..	76	15	68	78	12	62	64	15	65	75	28	64	73	25	65	..	..	..
1882, ..	68	8	60	66	8	67	67	16	62	63	16	65	72	23	67	..	..	..
1883, ..	79	9	69	77	9	64	67	18	65	69	18	66	79	29	61	..	..	..
1884, ..	71	9	60	75	8	62	69	23	65	95	32	65	78	35	59	..	..	..
1885, ..	71	4	59	79	6	59	77	18	66	76	24	61	82	29	63	..	..	..
1886, ..	69	9	67	83	9	64	84	29	68	68	31	68	90	45	65	..	..	..
1887, ..	69	11	62	65	11	61	78	16	67	86	24	68	79	59	64	..	..	..
1888, ..	79	12	64	79	10	65	80	26	64	61	25	64	85	33	63	78	21	68
1889, ..	74	9	63	80	12	67	82	20	65	79	25	65	89	21	67	79	27	69
1890, ..	79	12	66	77	16	67	82	20	69	82	23	66	79	37	68	78	55	69
1891, ..	78	15	66	81	7	67	94	28	71	80	31	69	83	35	68	80	24	63
1892, ..	77	7	64	80	12	65	80	17	69	87	24	68	85	34	69	79	32	66
1893, ..	78	12	65	73	13	62	87	23	68	88	24	65	79	37	67	87	41	70
1894, ..	69	13	64	75	16	69	86	24	68	83	24	71	84	43	68	67	44	70
1895, ..	78	15	62	77	12	64	80	22	70	87	21	73	84	40	69	79	42	85
1896, ..	75	13	62	80	15	64	90	20	72	89	21	75	81	40	67	80	42	89
1897, ..	80	15	63	70	18	58	92	22	67	66	24	67	81	42	69	80	24	68
Total Average, ..	78	13	62	75	12	63	84	23	68	84	24	66	80	35	64	80	36	68

Engineer Class, Second Year.—Of this Class of seventeen men, two resigned during the first year and one failed to qualify, but was permitted to return. All fifteen have now qualified, gaining the Higher and the Or-

inary Assistant Engineer's Certificate. Ten men are qualified for the five Engineer and two Telegraph appointments guaranteed to the Class in the Provincial service. The marks gained show a decided improvement on last year, the first thirteen men of this Class earning 432 marks more than the thirteen men of last year.

Mr. Hari Prasad Vidyant has gained the first place with the best average since 1886, he is a practical man in addition to being a sound scientific scholar. The first four men retain the same positions they held at the end of their first year. Mr. Snee, the fifth man, has worked up from the ninth place by steady hard work.

The following marks were obtained for the Project. —

No.	Name.	Civil Engineering	Drawing	Surveying	Applied Mechanics	Grand Total	Order of Standing in Class.
		150	100	175	50	475	
1	Snee, M. J. ..	130	88	148	37	403	5
2	Loughran, J. W. H. ..	118	75	141	55	370	3
3	Hari Prasad Vidyant, ..	105	68	149	26	350	1
4	Cole, F. C. ..	103	86	129	30	341	12
5	LaCue, E. C. ..	115	84	98	35	332	7
6	Jones, A. E. ..	88	90	120	23	321	8
7	Gilbert, E. O. ..	100	43	106	35	324	13
8	Knolles, W. J. ..	97	88	105	32	322	11
9	Dady, A. W. ..	90	88	124	24	326	9
10	Bejoy Nath Sarkar, ..	86	60	127	39	312	2
11	Barj Nath, ..	60	65	115	36	294	4
12	Devina, W. ..	77	67	81	36	261	14
13	Leht Mohan Mukerji, ..	68	50	96	33	246	15
14	Durga Das Banerji, ..	62	42	100	13	217	16
15	Pranath Nath Mallik, ..	75	50	80	24	229	6

The Project given this year included the Plans, Section, Estimate and Report for the improvement of the Boorkee-Hardwar Road, as far as the Bahadurabad bridge of the Ganges Canal. Each Student had to make an independent survey and there was no combined party work in the Project. This system, though somewhat expensive and troublesome to carry out, is most advantageous to the Students in the matter of training, and gives the College authorities a clear insight to the capability of each man to utilize his theoretical training on practical work. It is satisfactory to be able to report that a large proportion of the

Projects submitted were distinctly over the average of former years. It was of course not possible in the limited time available for the preparation of this Project to ask the Students to submit details of all the works required, (three large rivers are crossed by the line,) but as far as they go, several of the Projects are not below the standard of those usually submitted to Government.

Engineer Class, First Year—The marks gained this year are not as good as usual. Of the *eighteen* men who joined *seventeen* passed the Entrance Examination, but *one* being over age does not compete for the appointments. *One* man joined the Class as an unprivileged Student paying fees. *Six* men fail to qualify. Of these I recommend that Messrs. Chestney and Leonard may be allowed to rejoin as they are likely to benefit by the Second Year's Course.

Although the Class as a whole has not done well, some men, notably Messrs. Cole, Marr, Bhagirath Lal and Green, have greatly improved on the places they held at Entrance.

Upper Subordinate Class, Second Year.—Out of the Class of *twenty-two* men, *one* failed to qualify at the end of the first year, but was permitted to rejoin, and all have now qualified as Overseers, *thirteen* earning the Higher certificate of Sub-Engineer. Sergeant Evans, who heads the list, obtains the highest marks earned since 1872, except those gained by Sergeant Hart in 1891. Several other men have earned good marks, and the Projects sent in were quite up to the standard required.

I propose to retain Sergeant Evans as Assistant Master from the 1st April, but will endeavour to give him a practical training before next March.

Upper Subordinate Class, First Year—*Twenty-five* men joined the Class, of these *twenty-two* were privileged and *three* paying fees of Rs 20 a month each. *One* unprivileged Student left before he had completed three months' study, and has since succeeded in passing the Entrance Examination. The *twenty-four* men of this Class have all qualified to rejoin.

Lower Subordinate Class, Second Year.—The *forty-two* men admitted to this Class have all qualified as Sub-Overseers with good marks. This Class has been thoroughly trained in Surveying and drainage demarcation, and their drawing is also good. Baba Baldeo Prasad, the Head Master, and his Assistants deserve credit for their work.

Although no appointments are guaranteed for this Class, I am glad to say the demand is more than up to the supply, and I have offers of employment ready for nearly every man, not including the requirements for famine work.

Lower Subordinate Class, First Year.—This Class consists of twenty-four men selected from those who passed the Entrance test below the first forty qualifying for privileged Entrance. Each man pays a tuition fee of Rs. 10 per mensem. It is satisfactory to be able to report that all have worked well, and qualified for rejoining next Session. The Class is one of the most promising in Drawing we have had for some time.

The following Statement gives the religious denominations of the Staff and Students —

Class.				Christians.	Hindus.	Mahomedans.	Total.
Staff, ..	..	..	..	18	12	5	30
Students, ..	..	..	..	74	98	22	194
Prom, ..	..	..	..	6	43	47	96
Total, ..				98	154	74	326

The Report now submitted does not deal with many matters of interest regarding the College which have come under the consideration of the Managing Committee and been submitted to Government in the regular Proceedings.

In conclusion, I have the pleasure of expressing my complete satisfaction with the work done by the Staff of the College. During the year we lost the valuable aid of Lieut. Crosthwait Second Assistant Principal, through sickness, and of Mr. C. C. Bellima, Fred. Marton, Upper Subordinate Class, by superannuation, after a service of 24 years in the College.

I trust His Honor the Lieutenant-Governor, N. W. Provinces and Oudh, will be satisfied with the results of the year's work.

I have the honor to be,

Sir,

Your most obedient Servant,

J. CLIBBORN, Lieut.-Col., I. S. C.,

Principal

PROCEEDINGS AT THE CLOSE OF THE ANNUAL SESSION OF THE
THOMASON CIVIL ENGINEERING COLLEGE, ROORKEE, ON
THURSDAY, THE 25TH MARCH, 1897.

The Staff of the College, the Students of the various Classes, and many English and Native Visitors, having assembled in the Large Hall of the College at 11 a.m., the Chair was taken by LIEUT.-COL. J. CLIBBORN, I.S.O., Principal, Thomason College.

The Principal then said—

LADIES AND GENTLEMEN,—We have again to regret the inability of His Honor the Lieutenant-Governor to take part in our Proceedings to-day. You all know the strong interest Sir Antony MacDonnell takes in this College, but few can be as well aware as I am of the care which he has personally bestowed on every detail of its reorganization and general working. I had hoped that the Hon'ble Mr Odling, President of the Managing Committee of the College, would have been able to take his place, but he writes that famine duty renders it impossible for him to preside, and he asks me instead to convey his best wishes to the out-going Students and the College generally in which he has always taken a warm interest.

I will not trouble you, Ladies and Gentlemen, by reading the Annual Report on the College, as it is mostly confined to statistical matter which would, I fear, be uninteresting to most of those present; it will suffice to say that on the whole I have been able to report favourably to Government on our progress during the year, and I hope and believe that we have laid the foundation of considerable advance in the future.

It is interesting to recall the phases which the education of Engineers has undergone. In very early days it was purely practical, without any theory at all. It then, on the introduction of schools, became almost purely theoretical, the disadvantages of this style soon manifested itself, and a practical course to succeed the theoretical was added; many difficulties were met with in carrying this out economically and

efficiently. A few years ago a somewhat remarkable demand for what was called Technical Training was made in all parts of the Educational world, the schools equipped themselves with expensive, and in many cases it is to be feared unsuitable, apparatus, but few properly trained instructors were available, and the results were in many cases discredited by experts. This system of training has, however, been carried on with perseverance, the details objected to have been removed or altered, and a better class of instructors secured, and in many of the leading schools a really valuable training is now given to the Students.

Mr Hari Prasad Vidyant, the first man of the Engineer Class, has distinguished himself by gaining very high marks and no less than eight prizes, including hard cash amounting to Rs 1,250. In common with his brother Students cannot but regret he is prevented by severe domestic affliction from being present here to-day. Mr. Vidyant has not gained his place by his mathematical attainments only, he has done well in the practical subjects, and will, I am sure, make a name for himself in the future.

Mr Bejoy Nath Sarkar, the second man, gains the Higher Certificate as Assistant Engineer and the Kunhya Lal Gold Medal.

Mr. Loughran is third with the Higher Certificate, Mr. Snee, who passes fifth, wins the Thomason Gold Medal awarded for the best Project of the year. This important competition produced several excellent and complete Projects, the working out of which will prove of great advantage to those who took part in the competition. Mr Snee has well earned his prize.

In the Upper Subordinate Class Sergeant Evans comes in an easy winner with the highest marks earned since 1872, except those gained by Sergeant Hart in 1891. He carries off five prizes. Mr Plomer is second, and Hottinger third with the Mathematical Prize. Sergeant Hayles wins the Prize for Photography after a close contest with Sergeants Evans and Brining, who both contributed an excellent set of pictures. Munshi Behari Lal wins Kunhya Lal's Silver Medal.

Danlax Ram is the first man in the Lower Subordinate Class, with 81 per cent. of full marks and two Medals. Bishan Singh is only three marks behind, Piar Lal, who is third, carries off the Medal for Surveying, Sundar Singh that for Mathematics, Karim Baksh for Drawing and Ramditta Mai for Ferrottype.

There are no guaranteed appointments for this Class, but the 42 men comprising it have already had the gratification of selecting appointments for themselves from the vacancies available on the College Register.

In the Military Survey Classes, Lca.-Sergeant Stonor and Naik Ramdya! Singh gain first place in their respective Classes.

Volunteer Bradley is the best shot in the Company, and Volunteers Green, Hurst, Knolles and Gilbert also win prizes.

The Boat race has been won by the second year Engineer Students, the same crew who won last year as First year Students, and Messrs. Snow, Gilbert, Hottinger and O'Leary win the Tonnage and Racquet Tournaments in their respective Classes.

I will ask Capt Bullen to call up the successful Students to receive the rewards of their labour.

After the presentation of Certificates and Prizes to the Students, the Principal delivered the following Address —

o STUDENTS AND LADIES AND GENTLEMEN,—I would first ask the Students who are leaving us to-day after two years' hard and successful work, to bear in mind what I have so often told their predecessors that their most important test begins now, the reality of this test has been very fully recognized by the Government of India in the new rules for training issued for the benefit of the Students who will join the College on the 1st November, 1897. These rules* run as follows —

— You will note that Government in these rules wisely declines to accept the theoretical test of a man's ability as all and sufficient proof that he is bound to turn out a good and useful Engineer. Government calls in addition for practical proof on out-door work that he is really fitted to govern himself and his fellow-workers, and to apply practically the theoretical knowledge he has acquired. The old rules no doubt in some measure aimed at the same object, but now the active stimulus of competition is added.

The close of this Session is marked by many points of interest in connection with the College. The Rules and Course of Study forecasted in their Report of 1891 by the Committee on Technical Education, modified to a considerable extent by the two sanctions of the Secretary of State for India and the orders of Government, have now been finally drawn up and approved of. These rules will come fully

* See Circular for 1897.

into force on the 1st November, 1897, and should materially improve the professional education of all Classes in the College. They provide for a more comprehensive study of Science and Engineering, for a training in Electrical work, and for practical courses in Laboratories and Workshops. The call for increased training in practical Electrical work is very strong at present—one of the leading Calcutta firms has three Electrical Engineers in its employ, and Installations are being proposed and put up in all parts of India. No Engineer of the future can be considered competent who is unable to deal with ordinary Electrical questions, and I anticipate a strong demand for specially trained men in a few years, before indeed we will be able to supply them from this College. I may add that without efficient experimental laboratory and shop work no Student can be properly trained in this subject.

During the past year the East wing of the College has been remodelled, and the new rooms in the West wing are approaching completion. This has enabled us to consolidate and improve in many ways the position of the College Press, and will give us proper accommodation for the increase in Classes due to the reorganization.

An exposure room for Photo-Mechanical Process work has also been built, and very considerable progress made in this art, which is likely to lead to further developments.

A simple, yet it is hoped effective, Water-supply project for the College has been sanctioned, and the work is well in hand, when completed this pipe supply of pure water will be a great boon.

Four new Classes have been started, viz., the Mechanical Apprentice Class, who receive their mechanical training under the care of the Superintendent of the Canal Foundry, and three Industrial Classes. These latter have been started on a modest basis, but if they prosper, then introduction may lead to a development of art industry in the North-Western Provinces, and thus supply a much felt want. Two of these Classes are intended for the training of well-educated Natives of scientific tendencies.

One important matter remains to be noticed. The rules of this College disqualify for guaranteed appointments any European who is not a statutory Native of India, under the new rules, by paying a fee, very small compared with those usually demanded in England, Europeans and Natives of any descent can join the College within certain mode-

rate restrictions and qualify themselves for employment in the Profession generally. *

The same advantage has been granted to the other Classes for men who pass the Entrance Examinations below those gaining privileged Entrance, and I find that this advantage is thoroughly appreciated, as far more candidates have applied for admission under these rules than the College can possibly contain, or the present Staff deal with.

I am glad also to be able to inform you that the demand for men from this College by outside employers has been well maintained. I think this statement is fully substantiated by the fact that I have been unable to fill up 230 of the appointments offered this year. I may add that comparatively few of these vacancies were for famine works, the demand came for survey and works from all parts of India and from Africa, and indeed on one occasion I was asked by a high German official if I could supply that portion of Africa which is under German influence.

I will conclude by offering my warmest thanks to the Staff of the College for their most efficient help, and to the Students for their excellent conduct during the year, which has rendered my administration very pleasant. We have on this occasion to regret the absence from our midst of Lieut Crosthwait, R.E., who had to return to England on account of ill health, and of Mr Sullivan, late Head Master, through whose care more than 80 per cent. of the Upper Subordinates now serving in India must have passed.

COL. LEACH, C.B., D.S.O., R.E., *Commanding the Station, having been asked to address the Students, said —*

LADIES AND GENTLEMEN, AND STUDENTS OF THE INDIAN COLLEGE, — I have been asked to say a few words before the conclusion of the Proceedings to-day, which must be my apology for trespassing on your patience.

Every body who is interested in the College must have been very pleased to hear Colonel Clibborn's report on the progress made during the past year, and I am sure I am only expressing the feelings of all of us visitors in congratulating him and his Staff on their success.

To those of you who are leaving the College I can only say you have great chances in front of you, in the course of which every one of

you sooner or later is sure to get an opportunity of showing what he is worth, and that is all a good man need wish for.

As one goes through life one meets a certain number of disappointed men, who say they never had their chance and that they see no likelihood of ever getting it, but more often than not you may be pretty sure that the fault lies not so much in the absence of chances but in something wanting in themselves.

A zealous man with a proper spirit and feeling of loyalty to his superiors is pretty sure to get on.

You will often no doubt be left in independent charge with difficult questions to deal with, and have to act on your own judgment, your success will then entirely depend on how you apply what you have learnt here, and in this respect you may, I know, feel quite confident of being fully equipped.

One word of advice to you—keep up your interest in, and take part in, all out-door amusements whenever you get the opportunity.

These not only bring you in contact with other men outside your own line of life, which is always a good thing, but also keep you in good health and activity, and a healthy active man, even if not a genius, is worth a lot in any capacity.

To you Military Students, in whom I am of course specially interested, I say—some of you are now taking up civil work, but never forget that you are Soldiers before everything. All that you have learnt in your regiments, discipline, the necessity for sobriety, habits of punctuality, looking up to and loyally carrying out the orders of those above you, will stand you in good stead now.

These, though they seem to be ordinary every-day virtues, are nevertheless rarer than one would think, and a superior officer is never slow to recognize them, which means your success and promotion.

There is one other Class here to whose value I can testify from my own personal knowledge, and that is the Military Survey Class—these men are always thoroughly well trained, and have on many occasions proved themselves of the greatest value.

In conclusion, let me remind those of you who are remaining at the College that you have a tough job before you—but stick to it, it will pay you in the end. All the same I am bound to say that I am very glad it is you who have to tackle it and not I.

FINAL EXAMINATION, SESSION 1936-37.

LIST OF SUBJECTS AND EXAMINERS.

1 Engineer Class, 2nd year.

2 Upper Subordinate Class, 2nd year.

3 Lower Subordinate Class, 2nd year.

4 Engineer Class, 1st year.

5 Upper Subordinate Class, 1st year.

6 Lower Subordinate Class, 1st year.

Date Month	No. of pages	Subject	Classes	Examiners
10	25	Arithmetic,	2, 3, 4	Capt. J. H. Fairley.
8	12	Algebra,	3	Lieut. F. W. Richey, R. A.*
	15	Geometry,	2, 3, 4	Lieut. D. M. Griffith, R. E.*
8	28	Trigonometry,	2, 3	Lieut. E. L. Hardcastle, R. A.*
8	30	Mensuration,	2, 3, 4	Capt. J. H. Fairley.
1	1	Mechanics, Part I,	1, 2	Lieut. C. C. Noott, R. A.*
4	17	Mechanics, Part II,	1, 2	
5	23	Hydro-Mechanics,	1, 2	Capt. E. D. Bullen, R. E.
9	23	Geometrical Conic Sections,	1, 2	Lieut. H. B. D. Campbell, R. E.
8	14	Co-ordinate Geometry,	1	
8	27	Differential Calculus,	1	
8	29	Integral Calculus,	1	
2	8	Applied Mechanics,	1, 2	Capt. E. D. Bullen, R. E.
4	30			
1	4	Materials and Construction,	1, 2, 3, 4	G. R. Bird, Esq.*
8	11	Special Construction,	1, 3	Major G. C. F. Oaslow, R. E.*
	25	Estimating,	1, 2, 3, 5	Capt. J. H. Fairley.
6	24	Mechanics,	1, 2, 3	D. S. Robertson, Esq.*
	33	Drawing,	1, 3, 5	Capt. E. D. Bullen, R. E.
8	24			G. T. Sparks, Esq.
2	6	Surveying,	1, 2, 3, 4	Major F. G. Bond, R. E.*
5	22	Experimental Science,	1, 2	Capt. E. D. Bullen, R. E.
10		Astronomy (view cover),	1	
1	2	Algebra,	3, 4	Lieut. H. B. D. Campbell, R. E.
2	9	Applied Mechanics,	3	D. S. Robertson, Esq.*
	16	English,	3, 4	Conductor J. O'Neill.
4	21	Arithmetic,	5, 6	Capt. J. H. Fairley
8	26	Algebra,	6	Pandit Baldeo Prasad.
8	13	Geometry,	5, 6	Capt. J. H. Fairley.
8	31	Trigonometry,	5	Lala Shankar Lal.
4	10	Mensuration,	5, 6	Pandit Baldeo Prasad.
9	7	Materials and Construction,	5, 6	Capt. J. H. Fairley
1	8	Special Construction,	5	Pandit Lachmi Shankar.*
8	16	Applied Mechanics,	5	Munshi Hira Khan.*
2	16	Surveying,	5, 6	Sergt. C. Bolton.
1	5	English,	5, 6	Murza Ahmad Beg.
9	36	Photography,	6	Sergt. C. Gyda.
				Capt. E. D. Bullen, R. E.

Order of Standing in Class.	Engineer Class.		
	SECOND YEAR.		
	Full Marks, ..		
	Minimum Total, Qualifying Marks for Higher Certificate, ..		
	Govt. Appointment, ..		
			Ordinary Certificate, ..
		Date of Birth	Where educated
1	HARI PRASAD VIDYANT, ..	7-3-74	Mour Central College, Allahabad, ..
2	REJOY NATH SARKAR, ..	15-11-78	Presidency College, Calcutta, ..
3	JOSEPH WILLIAM BRADON LOUGHRAN,	17-3-74	Bishop Cotton School, Simla, ..
4	RAJ NATH,	0-3-76	Government College, Lahore, ..
5	MICHAEL JOSEPH SNEE, ..	1-9-78	St. Joseph's College, Darjeeling, ..
6	PRAMATHA NATH MALLIK, ..	26-8-78	Hooghly College, Hooghly, ..
7	EUGENE CONRAD LECUN, ..	18-3-74	St. Joseph's College, Darjeeling, ..
8	ARTHUR EDWARD JONES, ..	8-3-78	La Martinière College, Lucknow, ..
9	ARTHUR WILLIAM DADY, ..	10-3-78	La Martinière College, Lucknow, ..
10	DUGGA DAS BANERJI, ..	22-3-76	Presidency College, Calcutta, ..
11	WILLIAM JOSEPH KNOLLES, ..	10-1-74	Mr. Sheehan's School, Mussoorie, ..
12	PERCIVAL CHARLES COLE, ..	30-8-74	La Martinière College, Lucknow, ..
13	EDWIN OSBORNE GILBERT, ..	14 11-78	Philander Smith Institute, Mussoorie,
14	WILLIAM DEVINE, ..	3-3-76	St. George's College, Mussoorie, ..
15	LALIT MOHAN MUKERJI, ..	2-3-74	Canning College, Lucknow, ..

Elementary Two Mathematics.	Mechanics and Conic Sections.	Higher Pure Mathematics.	Applied Mechanics.	Civil Engineering.	Drawing.	Surveying.	Experimental Science.	Physique and Sports.	Grand Total.	Percentage of Total on		Remarks.
										3400	3250	
400	400	180	280	850	400	400	300	250	3400			
200	200	75	135	435	200	200	180	125	2268			
133	133	..	88	283	133	133	100	83	2047			
133	133	..	88	283	133	133	100	83	1625			
332	341	139	175	662	314	330	272	181	2736*	80		Higher Certificate as Assistant Engineer (General) of India (Prize of Rs. 1,000) Thomson Prize of Rs. 350. Country Gold Medal for Mathematics. Lieut.-Col. Chibbar's Silver Medal for Civil Engineering. General Macdonald's Prize for Experimental Science. Silver Medal for Surveying, Drawing and Photography.
337	374	98	181	580	292	333	238	134	2627*	74		Higher Certificate as Assistant Engineer. Raj Bahadur Kumhara Lal's Gold Medal.
336	343	86	174	562	278	303	191	233	2405*	71		Higher Certificate as Assistant Engineer.
338	394	82	189	549	336	279	205	180	2352*	69		
362	323	57	159	563	297	237	192	241	2284	67	70	Certificate as Assistant Engineer. Thomson Gold Medal for best Engineering Design.
364	369	103	141	620	220	199	219	200	2215*	65		
390	236	24	154	505	238	233	165	208	2113	62	66	
272	143	..	133	552	312	261	186	219	2085	61	64	
308	191	..	139	505	293	255	164	227	2082	61	64	
301	217	67	120	521	222	238	206	262	2041*	60	63	
302	142	..	130	495	296	233	172	206	1980	58	61	Certificate as Assistant Engineer.
276	171	..	108	493	236	241	168	212	1905	58	59	
281	146	..	125	425	289	240	149	221	1876	55	58	
263	194	..	126	465	236	189	160	196	1829	54	58	
207	182	..	124	474	193	187	144	217	1828	54	56	

Engineer Class. FIRST YEAR.			
Full Marks,			
Qualifying Marks,			
Order of Standing in Class.		Date of Birth	Where educated.
1	JOSEPH BENJAMIN GEORGE SMITH, ..	14-2-'78	La Martinière College, Lucknow, ..
2	FREDERICK EUSTACE COLE, ..	29-1-'78	Philander Smith Institute, Muscogee, ..
3	TERENCE ARTHUR BRADLEY, ..	4-10-'78	La Martinière College, Lucknow, ..
4	CECIL OCTAVIUS JOLLY, ..	11-7-'77	La Martinière College, Lucknow, ..
5	BHAGWATI PRASAD VARMA, ..	17-5-'77	Agra College,
6	GEORGE WILLIAM MARR, ..	20-11-'76	La Martinière College, Lucknow, ..
7	GIAN CHAND,	2-'78	Government College, Lahore, ..
8	BHAGIRATH LAL,	5-7-'76	Government College, Lahore, ..
9	HARRY DALE GREEN, ..	19-7-'78	La Martinière College, Lucknow, ..
10	ROBERT CHARLES VANKETT, ..	21-3-'76	St Joseph's College, Darjeeling, ..
11	SURENDRA NATH BHADURI, ..	2-8-'78	Canning College, Lucknow, ..
12	CHARLES BENNY SHANAN, ..	22-2-'77	St. George's College, Mussoorie, ..
13	HERBERT WILLIAM POOLNEY CHRISTIE	16-2-'77	La Martinière College, Lucknow, ..
14	GEORGE RUSSELL LEONARD, ..	27-9-'78	Central College, Bangalore, ..
15	SIDH PRASAD,	2-2-'78	Canning College, Lucknow, ..
16	WILLIAM GEORGE JARBO, ..	10-3-'78	St. Joseph's College, Darjeeling, ..
17	ALBERT LEMAISTRE PASSANAH,	2-9-'78	La Martinière College, Lucknow, ..
18	WILLIAM VAZ,	26-7-'74	St. George's College, Mussoorie, ..

Elementary Pure Mathematics	Mechanics and Conic Sections.	Applied Mechanics	Civil Engineering.	Drawing.	Surveying	Experimental Science.	Grand Total.	Percentage of Total.	Remarks.
400	280	100	460	140	160	140	1680		
188	98	88	258	46	59	46	840		
239	118	10	813	73	116	96	1184	70	To rejoin College on 1st April.
321	118	61	216	105	96	101	1172	70	
344	207	61	289	57	105	87	1167	69	
293	160	53	284	83	88	93	1052	63	
288	148	49	302	87	98	106	1043	62	
270	141	58	291	73	107	99	1041	62	
281	161	48	291	57	89	106	1034	62	
289	121	54	304	77	97	108	1030	61	
270	157	53	265	85	94	93	1017	61	
269	127	41	266	101	83	81	968	58	
212	115	40	280	64	109	106	928	55	
228	127	42	276	55	101	79	908	54	
270	92	40	238	49	80	70	839	50	
244	119	38	210	24	77	105	827	49	
257	112	41	238	30	63	75	817	48	Failed to qualify.
229	64	26	185	43	82	88	724	43	
210	44	20	212	47	60	70	653	39	
253	71	24	258	21	46	65	540	32	

List of Overseer Apprentices showing where they

No.	Name.	Rank and Corps and where educated.
1	CHARLIE JOHN GYDE, ..	Sergt., 1st Gordon Highlanders, ..
2	THOMAS MCKENZIE, ..	Sergt., 2nd A and S. Highlanders, ..
3	ALFRED RAYMOND HOLMES, ..	Lee.-Corpl., 2nd K. O. Yorkshire L.I., ..
4	JOSEPH VALENTINE FRANCES, ..	Sergt., 2nd Durham L. I., ..
5	GEORGE HENRY FLOWER, ..	La Martinère College, Lucknow, ..
6	PRECIVAL BOURNE, ..	Mr Sheehan's School, Munamorie, ..
7	CHARLES DUNCAN, ..	Sergt., 2nd A. and S Highlanders, ..
8	FREDERICK EDWARD MYERS, ..	Mr Sheehan's School, Munamorie, ..
9	JAMES NORMAN SMITH, ..	Corpl., 2nd Durham L. I., ..
10	ROBERT O'BRIEN, ..	Sergt., 1st Hampshire Regt., ..
11	FAIZUL HASAN, ..	Saharsapur,
12	THOMAS HILL, ..	Lee.-Corpl., 5th B. I. Lancers, ..
13	BISHAN SINGH, ..	Lahore,
14	JOHN GORMAN, ..	Sergt., 2nd Royal Irish Regt., ..
15	CHARLES FREDERICK HEBBERD, ..	La Martinère College, Lucknow, ..

were trained, and the Branch to which posted.

Where trained.	Branch to which posted.	Remarks.
Bae Bareilly-Benares Railway and Thomason College,	Military Works.	
Meerut Division, Military Works, ..	Military Works.	
Poona Division, Military Works, ..	Military Works.	
Chakrata Division, Military Works and Thomason College,	Thomason College.	
Thomason College and Bae Bareilly-Benares Railway,	Roads and Buildings, N-W P and Oudh	
Lucknow, Kumaon and Ayazpata Provincial Divisions,	Roads and Buildings, Assam.	
Thomason College and Chakrata Division, Military Works,	Military Works.	
II. Allahabad Provincial Division, Meerut District,	Roads and Buildings, N-W. P. and Oudh	
Langar Division, Mari-Attock Railway, Rawalpindi Division, Military Works,	{ Railways.	
Rawalpindi Division, Military Works, Rawalpindi District, North-Western Railway,	{ Military Works.	
Fatehpur Division, Lower Ganges Canal, Rampur State,	{ Irrigation Works, N-W P and Oudh	
North-Western and Muzkaf-Bolan Railways,	{ Railways.	
Rawalpindi Division, Military Works,		
Fatehpur Division, Lower Ganges Canal, Rampur State,	{ Irrigation Works, Punjab	
Muzee Division, Military Works, ..		
Campbellpore Division, Mari-Attock Railway,	{ Military Works.	
Lahore Provincial and Rohilkhand Provincial Divisions,	Roads and Buildings, Punjab.	

Upper Subordinate Class.

SECOND YEAR.

Full Marks,			
Minimum Total, Qualifying Marks for Higher Certificate, .. .			
" " " " Ordinary "			
		Date of Birth	
1	JAMES JOHN EVANS,	3-6-'66	Sergt., 53rd Field Batty R. A., ..
2	FRANK AUBREY PLOMER, ..	15-11-'76	La Martinière College, Lucknow, ..
3	JAMES ALEXANDER HOTTINGER, ..	2-10-'75	La Martinière College, Lucknow, ..
4	FRANKLIN ANDREW BRINING, .	12-4-'65	Sergt., 9th Comp'y. (H) Ws. Dn R A.,
5	CHARLES HAYLES,	9-1-'70	Lee -Sergt., 1st Dorsetshire Regt.,
6	THOMAS ANDERSON HURST, ..	21-1-'75	Mr Sheehan's School, Munsoorie, ..
7	STANISLAUS GEORGE REILLY, ..	24-4-'77	St. Fidelis's School, Munsoorie, ..
8	JAMES DAVID GRANT,	23-3-'72	St. George's College, Munsoorie, ..
9	BEHARI LAL,	20-11-'74	Delhi,
10	ROBERT RACKSTRAW,	16-10-'71	La Martinière College, Lucknow, ..
11	HENRY JAMES GLENN,	25-9-'74	Lee -Corpl., 1st Hampshire Regt.,
12	ALFRED VINES,	24-3-'68	Lee -Corpl., 2nd Oxford Light Infy.,
13	MUNSHI RAM,	1-1-'74	Hoshiarpur,
14	FREDERICK GEORGE PAINTER, ..	20-4-'67	Lee -Sergt., 19th P. W. O. Humsar,
15	LARSEMI DATT TIWARI,	4-3-'74	Bareilly,
16	FAQIR CHAND,	28-11-'74	Gurdaspur,
17	WILLIAM BOURNE,	2-1-'78	Mr Sheehan's School, Munsoorie, ..
18	CHARLES EDWARD BUTLER O'CONNOR,	26-3-'78	Lee -Corpl., 1st Royal West Kent,
19	WILLIAM JAMES BROWN,	30-4-'74	Lee -Corpl., 2nd Derbyshire Regt.,
20	SHIAM BEHARI,	12-11-'74	Bareilly,
21	GANGA BISHAN,	27-5-'74	Kohat,
22	BISHAN SINGH,	19-4-'71	Ladhiana,

Mathematical	Civil Engineering		Drawing	Surveying	English	Physical and Sports	Grand Total	Percentage of Total	Remarks.
	Part I	Part II							
400	180	420	300	250	50	150	1750		
900	80	210	180	125	25	75	1050		
133	60	140	100	88	16	30	676		
357	137	322	282	253	46	150	1607*	82	Higher Certificate as Sub-Engineer. Silver Medal for General Merit, Drawing and Surveying. Prize for Civil Engineering 'Kavya Memorial' Silver Medal for Estimating.
345	123	333	254	192	41	147	1435*	82	Higher Certificate as Sub-Engineer.
379	114	322	243	191	43	147	1430*	88	Higher Certificate as Sub-Engineer. Prize for Mathematics.
333	105	332	273	210	47	150	1390*	79	Higher Certificate as Sub-Engineer.
286	138	304	252	216	49	135	1380*	79	Higher Certificate as Sub-Engineer. Silver Medal for Photography.
331	121	323	228	178	43	142	1368	78	
340	94	306	203	180	46	147	1316*	75	Higher Certificate as Sub-Engineer.
259	111	219	202	170	38	142	1241	71	
334	112	261	177	177	39	130	1230	70	Higher Certificate as Sub-Engineer. Raj Bahadur Kunhya Lal's Silver Medal.
316	92	297	180	156	44	129	1212	69	
282	112	285	234	187	45	140	1205	69	Higher Certificate as Sub-Engineer.
198	117	174	222	186	43	143	1190	66	Certificate as Overseer.
284	80	266	201	181	40	123	1145	65	
228	94	258	190	159	46	135	1113	64	Higher Certificate as Sub-Engineer.
279	91	233	200	144	29	120	1108	63	
291	81	227	190	162	24	138	1105	63	
266	82	228	202	142	42	142	1104	63	
231	86	238	203	161	48	140	1101	63	
224	84	247	176	165	45	145	1086	62	Certificate as Overseer.
274	69	198	166	120	44	121	1004	57	
229	69	203	170	120	34	123	972	56	
243	79	200	123	124	38	125	931	53	

* Qualified in Photography. † Highly Commended for Photography.

Upper Subordinate Class.

FIRST YEAR

Full Marks,

Qualifying Marks,

		Date of Birth	
1	HARRY WILLIAM RICH, ...	16-10-'70	Loc.-Corpl, 2nd Suffolk Regt, ..
2	EDWIN GEORGE WILLIAM MONTGOMERY, ..	10-5-'77	La Martinière College, Lucknow. .
3	WILLIAM CHARLES FRANCIS, ..	17-10-'73	Mr Sheehan's School, Mussoorie,
4	WILLIAM HARRY BAILLEY, .	27-7-'66	Sergeant, Ordnance Department,
5	FREDERICK JAMES SMITH, ..	15-3-'74	Mr Sheehan's School, Mussoorie,
6	RAM NEWAS SHUKUL, ..	9-11-'77	Allahabad,
7	MOHAMMAD ALL, ...	15-9-'74	Shalkot,
8	RAGBIR SINGH, ...	11-11-'74	Gujranwala,
9	SHYAM LAL GARGYA, ..	15-5-'73	Agra,
10	JOSEPH PHILIP ALOYSIUS AMERSON GRANT, ..	8-1-'74	St. George's College, Mussoorie,
11	RAM RATAN, .	10-8-'75	Bareilly,
12	CHARLES JAMES CUNNINGHAM, ..	1-1-'66	Color-Sergeant, 1st R. Surrey Regt, ..
13	HERBERT MALIR, .	4-1-'73	Corpl., 22nd Western Dn, R. A.,
14	ALBERT EDWARD O'LEARY, ...	29-11-'76	St. George's College, Mussoorie,
15	PANNA LAL,...	8-7-'70	Labors,
16	SUKHAN LAL BANSAL, ..	16-12-'74	Delhi,
17	HENRY WALTER INNES, ...	8-8-'72	Loc.-Sergt., 11th Hussars, ..
18	WILLIAM ALOYSIUS CHRISTIAN, ..	16-4-'73	St. George's College, Mussoorie,
19	GEORGE HAMILTON RICKETTS, ..	14-7-'71	Corporal, 2nd Yorkshire Regiment,
20	SAMUEL ARTHUR SMITH, .	17-8-'74	Bombr, 6th Field Battery, R. A.,
21	BERTRAM EDWARD MITCHELL, ..	1-8-'70	La Martinière College, Lucknow,
22	JOHN DRYSDALE MATHEW, ..	2-2-'67	Sergeant, 2nd Royal Irish Rifles,
23	RAM KRISHNA, ...	12-6-'76	Gurdaspur,
24	LACHMI NARAIN, ...	8-1-'73	Gurdaspur,
25	ALICK EDWARD LUMSDEN, ...	28-2-'75	La Martinière College, Lucknow, ..

Lower Subordinate Class.

SECOND YEAR.

Full Marks,

Qualifying Marks, { Class A,
Class B,

CLASS A and B.

				<i>Date of Birth</i>		
1	DAULAT RAM,	A	..	1-11-'74	Hoshwarper, ..	..
2	BISHAN SINGH,	A	..	25-5-'77	Ladhiana, ..	..
3	PIARE LAL,	A	.	21-2-'76	Saharanpur, ..	..
4	KAMPTA PRASAD,	B	..	27-8-'74	Lucknow, ..	..
5	NAWAB KHAN,	A	..	10-8-'75	Jullundur, ..	..
6	CHANDI PRASAD,	A	..	1-8-'77	Saharanpur, ..	..
7	ISHAR DAS,	A	..	13-10-'75	Gujrat, ..	..
8	BAHADUR CHAND,	A	..	13-10-'75	Lahore, ..	..
9	JAI KISHAN,	A	..	7-7-'77	Jullundur, ..	..
10	BAWSEI RAM,	A	..	6-12-'75	Jhalum, ..	..
11	DIWAN CHAND,	A	..	23-4-'77	Mooltan, ..	..
12	GOKAL CHAND,	A	..	1-8-'76	Saharanpur, ..	..
13	DYOKI NANDAN,	A	..	26-10-'74	Delhi, ..	..
14	DEVI DIAL,	A	..	18-9-'76	Sialkot, ..	..
15	LACHHMAN DAS,	A	..	22-9-'75	Kapurthala, ..	..
16	MUL CHAND,	A	..	13-7-'78	Umballa, ..	..
17	SHANKAR DAS,	A	..	13-8-'75	Hoshwarper, ..	..
18	HEM RAJ,	A	..	13-1-'77	Jullundur, ..	..
19	BIR BHAN,	A	..	21-1-'75	Patala, ..	..
20	SUNDAR SINGH,	A	..	15-4-'75	Lahore, ..	..
21	HAR NARAYAN,	A	..	13-10-'74	Jhalrapatan, ..	..

Mathematics.	Civil Engineering.		Drawing.	Surveying.	English.	Physique.	Grand Total.	Percentage of Total.	Remarks.
	Part I.	Part II.							
200	200	200	200	200	170	100	1870		
100	66	66	118	118	56	88	836		
75	50	50	87	87	42	25	686		
241	150	159	289	294	153	98	1354	81	Certificate as 3rd Grade Sub-Overseer, Raj Bahadur Kumbha Lal's Silver Medal for General Merit. Silver Medal for Civil Engineering.
236	150	149	285	283	150	98	1351	81	Certificate as 3rd Grade Sub-Overseer.
232	138	150	268	295	126	90	1298	78	Certificate as 3rd Grade Sub-Overseer. Silver Medal for Surveying.
222	148	153	284	291	104	94	1296	78	
216	142	150	268	264	141	98	1279	77	
226	142	144	255	289	128	83	1272	76	
230	138	139	242	281	143	97	1270	76	
222	141	151	244	279	141	91	1270	76	
212	133	156	263	281	139	84	1268	76	
216	152	149	228	264	140	96	1248	75	
217	139	120	248	277	149	91	1232	74	
242	116	138	266	264	122	89	1227	73	Certificate as 3rd Grade Sub-Overseer.
242	129	168	197	254	151	80	1221	73	
210	122	131	218	269	143	96	1202	72	
225	138	112	223	289	140	90	1198	72	
182	139	138	229	269	131	98	1196	72	
218	127	112	224	267	140	91	1189	71	
211	123	149	215	234	149	96	1178	70	
219	109	116	243	266	124	92	1175	70	
246	128	124	181	255	153	84	1171	70	Certificate as 3rd Grade Sub-Overseer. Silver Medal for Mathematics.
164	128	125	272	243	129	92	1160	68	Certificate as 3rd Grade Sub-Overseer.

* Qualified in Photography.

Lower Subordinate Class.**SECOND YEAR.***(Continued).*

Full Marks,

Qualifying Marks, { Class A,
 { Class B,**CLASS A and B**

			Date of Birth.	
22	BARAKATULLAH KHAN, A	..	4-1-76	Ludhiana, ..
23	LAHAURI RAM, A	..	30-3-76	Ludhiana, ..
24	NUR AHMAD, A		21-2-77	Umballa, ..
25	KARIM BAKHSH, B	.	25-5-76	Lahore, ..
26	ABDUL LATIF, A	.	7-1-77	Ludhiana, ..
27	KAMR-UD-DIN, A	.	24-5-77	Budann, ..
28	SINGHIA SINGH, A	.	9-1-76	Ludhiana, ..
29	SALIG RAM, A	.	8-5-76	Ludhiana, ..
30	SHAMSEER SINGH, A	.	30-4-75	Bahawalpur,
31	JANKI NATH, A	.	2-3-76	Karnal, ..
32	RAMDITTA MAL, A	.	17-11-75	Kapurthala, ..
33	SUNDAR LAL, A	.	5-11-75	Muzaffarnagar,
34	WALI MUHAMMAD, A	..	9-10-75	Gurdaspur, ..
35	BABU RAM, A	..	6-10-75	Jullundur, ..
36	ASA RAM, A	..	15-11-74	Pakala, ..
37	DILBAGH RAI, A	.	17-9-74	Jullundur,
38	RAM LAL, A	..	2-5-77	Jullundur, ..
39	NAUHARIA RAM, A	..	7-4-76	Ludhiana, ..
40	BISHAN DAS, A	.	23-1-75	Kapurthala,
41	MUHAMMAD SAID, A	..	25-3-76	Bahawalpur,
42	KALYAN DAS, A	..	23-11-74	Aligarh, ..

Mathematics.	Civil Engineering.		Drawing.	Surveying.	English.	Physique.	Grand Total.	Percentage of Total.	Remarks
	Part I.	Part II.							
300	200	200	350	350	170	100	1670		
100	66	66	116	116	58	33	835		
75	50	50	87	87	43	25	556		
197	125	121	250	249	115	94	1152*	69	Certificates on 3rd Grade Sub-Overseers
221	132	114	178	270	140	93	1149	69	
184	122	138	223	243	143	96	1148	69	
120	177	169	296	242	105	98	1147	69	Certificates on 3rd Grade Sub-Overseers Silver Medal for Drawing
114	129	136	203	239	146	87	1146	69	
188	128	111	211	244	158	87	1127	67	
173	121	144	222	267	117	93	1127	67	Certificates on 3rd Grade Sub-Overseers
191	110	121	219	254	110	90	1118	67	
185	122	97	203	262	146	99	1114	67	
197	202	123	211	235	134	91	1094	66	Certificates on 3rd Grade Sub-Overseers Silver for Penmanship
201	122	93	180	252	145	82	1075	64	
182	112	137	197	230	122	92	1073	64	
167	118	105	214	240	230	98	1072	64	Certificates on 3rd Grade Sub-Overseers
209	112	111	172	245	136	83	1069	64	
178	120	125	178	221	140	94	1056	63	
190	101	115	172	228	125	91	1043	63	Certificates on 3rd Grade Sub-Overseers
196	120	92	164	221	143	87	1034	62	
170	103	100	199	244	123	86	1025	61	
177	104	114	157	228	126	94	1000	60	
143	115	78	163	219	149	91	958	57	
113	109	95	206	209	114	98	941	56	

* Qualified in Photography

Order of Standing in Class.

Lower Subordinate Class.

FIRST YEAR.

Full Marks,

Qualifying Marks,

				Date of Birth			
1	RATAN LAL,	..	..	20-8-77	Meerut,	..	..
2	FARID-UD-DIN,	..	..	17-9-75	Ludhiana,	..	..
3	BHOLA SINGH,	..	..	18-8-76	Ludhiana,	..	..
4	GAURI SHANKAR,	..	..	17-3-77	Jullundur,	..	..
5	WILAYATI RAM,	..	..	28-11-78	Ludhiana,	..	..
6	HABIB AHMAD,	..	..	1-1-75	Aligarh,	..	..
7	BARYAM SINGH,	..	..	4-6-76	Patna,	..	..
8	BEHARI LAL,	..	..	8-4-77	Ludhiana,	..	..
9	MILAWA RAM,	..	..	4-4-76	Jullundur,	..	..
10	SUNDAR SINGH,	..	..	13-9-76	Patna,	..	..
11	AHMAD-UD-DIN,	..	..	21-5-77	Patna,	..	..
12	SURAJ BHAN,	..	..	15-1-75	Karnal,	..	..
13	ATMA RAM,	..	..	10-3-77	Patna,	..	..
14	GULZARI MAL,	..	..	20-3-78	Gurdaspur,	..	..
15	THAKUR DAS (1),	..	..	8-5-75	Ludhiana,	..	..
16	MUHAMMAD ALI KHAN,	..	..	14-4-78	Meerut,	..	..
17	KARM SINGH,	..	..	12-4-77	Ludhiana,	..	..
18	LAL SINGH,	..	..	24-5-76	Ludhiana,	..	..
19	KHAR SINGH,	..	..	16-4-76	Patna,	..	..
20	BULAKI RAM,	..	..	19-12-75	Saharanpur,	..	..
21	JUSWANT RAI,	..	..	7-8-74	Kapurthala,	..	..
22	CHIRANJI LAL,	..	..	27-8-75	Hissar,	..	..
23	THAKUR DAS (1),	..	..	24-5-76	Patna,	..	..
24	NARINDAR SINGH,	..	..	7-6-77	Jullundur,	..	..

Elementary Mathematics.	Natural Science.	Drawing	Surveying.	Language.	Materials and Construction.	Grand Total.	Percentage of Total.	Remarks.
280	80	220	260	100	150	1020		
80	16	73	86	23	50	310		
334	28	160	186	83	124	819	80	
189	30	130	195	73	133	810	79	
103	22	159	210	67	124	788	77	
318	27	166	164	79	127	781	77	
163	15	204	193	85	115	775	76	
210	26	164	169	83	116	768	75	
183	23	160	202	59	126	758	74	
186	24	127	184	73	128	727	71	
228	27	109	166	73	119	722	71	
187	25	142	185	67	113	719	70	
189	28	141	192	60	112	716	70	
195	23	130	180	67	120	714	70	
216	24	107	160	69	105	681	67	
179	26	100	167	77	115	683	66	
144	21	126	193	66	110	680	66	
116	21	181	180	51	111	680	66	
196	23	119	151	56	106	651	64	
141	20	129	190	53	107	642	63	
180	28	91	195	66	94	638	62	
156	19	119	162	71	101	628	62	
131	26	119	137	71	120	624	61	
178	22	87	140	66	119	612	60	
148	22	87	160	62	170	591	58	
149	13	93	167	76	88	588	58	

To register College on 1st April

Native Military Survey Class.

Rank and Name	Mathematics.					Surveying.					Grand Total	Percentage of Total	Nature of Certificate. H. Higher. O. Ordinary.
	Arithmetic	Constructive Geometry	Constructive Trigonometry	Total.	Field Works, under instruction.	Field Works, independent.	Examinations.	Drawing.	Total				
	30	30	40	100	50	150	200	200	800	700			
Full Marks,	..	..	..	..	..	100	138	..	400	467			
Qualifying Marks, Higher Certificate,	..	..	..	..	..	75	100	..	300	350			
" " Ordinary "	..	..	..	..	..	..	..	..	..	..
RAM DAYAL SINGH, .	30	30	31	91	41	124	161	161	519	604	86		H
SHEIKH ABDUL KADIR,	27	29	37	93	42	124	172	165	503	598	85		H
CHUBH SINGH,	30	30	34	94	39	122	159	145	485	559	80		H
SOHAN SINGH,	30	30	29	89	42	126	140	154	462	551	79		H
SIRDHOJ GURUNG,	..	..	..	..	..	..	..	..	..	..			H
Lee-Nauck, 2nd Bn 1st Gurkha Rifles,	..	..	..	..	..	..	..	..	..	..			H
Lee-Nauck, 7th Bengal Infantry,	26	30	22	78	34	101	143	170	448	526	75		H
Sowar, 14th Bengal Lancers,	28	30	20	78	43	118	133	154	448	526	75		H
Nauck, 7th Bombay Infantry,	24	25	27	76	36	106	154	181	447	523	75		H
Lee-Nauck, 5th Punjab Infantry,	26	28	25	77	32	102	158	127	410	497	69		H
Sowar, (Q.O.) Corps of Guides,	24	29	9	62	36	92	140	123	421	493	69		O
Nauck, 1st Sikh Infantry,	19	17	13	49	34	111	131	187	413	462	88		O

Sl. No.	Name.	Rank and Corps.	Caste.	Residence		
				Village.	Pargana or Tehsil.	Zillah.
3	BAISI SINGH,	Sowar, 14th Bengal Lancers, ..	Jat,	Sydpore, ..	Bulandshahr,	Bulandshahr.
4	SOHAN SINGH,	Duffadar, 16th Bengal Cavalry, ..	Amral,	Madirah Khurd,	Sialkot, ..	Sialkot.
5	CHUER SINGH,	Sepoy, 4th Punjab Infantry,	Jat Sikh,	Bhailar, ..	Taran Taran,	Ambihar
6	SIRDHOJ GURUNG,	Lee-Nasik, 2nd Bn. 1st Gurkha Rifles, ..	Gurung,	Darandina, ..	Darandina, ..	Khan.
7	RAJAB ALI,	Sowar, "Queen's Own" Corps of Guides, .	Qasid Bani,	Peshawar, ..	Peshawar, ..	Peshawar.
8	NAJAB,	Lee-Nasik, 5th Punjab Infantry,	Uman Khel, ..	Baghlada, ..	Mardan, ..	"
9	BAKI SHAH,	Nasik, 1st Sikh Infantry,	Karnah, ..	Yar Humin, ..	Sawable, ..	"
10	RAM DAYAL SINGH,	Nasik, 7th Bengal Infantry,	Rajput,	Muger, ..	Dalmenow, ..	Rai Bareilly.
11	ABDUL KHAH,	Nasik, 7th Bombay Infantry,	Pathan,	Poonia, ..	Poonia, ..	Poonia.
12	SHIEKH ABDUL KADIR,	Lee-Nasik, 28th Bombay Pioneers, ..	Sheikh,	" ..	" ..	" ..

Special Class of Native Non-Commissioned Officers and Men for the Mombassa-Uganda Railway.

Order of Ranking	Name.	Corps.	Boatmen.	Piaas.	Field Boats.	Instruments Frictions.	Clock Levering	Grand Total.
		<i>Field Marks.</i>	50	100	80	50	50	300
1	KHAZAN SINGH,	Quar., 4th Bengal Cavalry,	48	88	38	38	42	284
2	KHAZAN SINGH,	Harildar, 1st Sikh Infantry,	40	96	40	40	37	253
3	PURAN SINGH,	Duffadar, 19th Bengal Cavalry,	33	92	38	26	49	248
4	HARNAM SINGH,	" 7th " " Infantry,	43	78	35	41	48	242
5	NABI BAKHSI,	Harildar, 17th " Infantry,	41	85	27	50	39	241
6	GHULAM ALL,	Nark, 2nd Punjab "	48	76	29	46	32	236
7	HAZARA SINGH,	" Bengal Sappers and Miners,	39	89	24	38	32	232
8	JAMSHER KHAN,	Duffadar, 17th Bengal Cavalry,	37	90	25	43	10	205
9	HUDH RAJ,	" 19th " " Infantry,	36	82	38	38	10	203
10	RAM SINGH,	Harildar, 14th Sikh Infantry,	29	84	36	37	18	203
11	GHULAM RASUL,	" 2nd Punjab "	26	65	28	41	16	186

Mechanical Subordinate Class.**March, 1897.**

No.	Name.	Station.	Remarks.
1	KALYAN RAI,	Lucknow,	
2	SHIV DIAL,	"	
3	RAJENDRA NATH LAHRI, ..	"	
4	SARAT CHANDRA DATT, ..	"	
5	SHIV PRASAD,	"	
6	HARI MOHAN MITRA,	"	
7	SAJJAD HUSAIN,	"	
8	RAZA HUSAIN,	"	
9	ASHUTOSH GANGULY,	"	

H 1897

Drawing.			Surveying					Experimental Sciences				Physique and Sports.	Grand Total.	Order of Standing in Class.
Project Drawings	Final Examination	Total.	First Year's Marks	Meridian Observations	Project Surveys	Final Examination.	Total.	First Year's Examination	Monthly Examination	Final Examination	Total.			
100	80	400	160	15	175	50	400	140	100	60	300	250	3400	
68	25	314	114	13	149	44	320	122	93	55	272	181	2736	1
69	29	292	110	13	127	33	263	123	90	45	258	224	2527	2
70	20	278	120	14	141	28	303	92	71	27	191	233	2405	3
65	2	236	118	9	116	36	279	97	73	39	205	180	2352	4
69	27	297	97	14	148	28	287	83	81	28	192	241	2284	5
59	7	220	80	9	80	30	199	99	76	44	219	200	2215	6
64	17	298	98	7	98	30	233	83	60	23	165	208	2113	7
90	18	313	95	11	120	35	261	87	70	39	186	229	2086	8
83	19	293	98	10	134	31	255	63	77	24	164	227	2082	9
42	13	212	89	13	100	33	235	98	71	37	206	162	2041	10
82	16	296	95	10	105	25	235	78	73	23	172	208	1980	11
86	19	236	84	11	122	24	241	76	70	23	168	212	1905	12
83	2	259	103	10	106	13	240	86	73	20	149	221	1876	13
67	3	236	84	7	81	17	189	75	68	17	160	196	1829	14
90	15	193	89	13	96	19	187	62	62	20	144	217	1828	15

Drawing.				Surveying.				Experimental Science			Grand Total.	Order of Standing in Class.
Monthly Examinations	General Engineering	Final Examination.	Total.	Station Surveys.	Adjustment of Instruments and Curves.	Final Examination.	Total.	Monthly Examinations	Final Examination.	Total.		
70	40	80	140	105	30	35	160	100	40	140	1680	
29	15	18	73	78	21	16	115	75	21	96	1184	1
31	24	28	105	59	23	14	96	78	23	101	1172	2
35	25	7	57	63	25	17	105	66	21	87	1167	3
38	20	24	82	54	17	17	88	74	19	93	1052	4
20	25	14	57	58	20	20	98	78	28	106	1048	5
40	18	17	75	68	22	17	107	79	20	99	1041	6
26	24	7	57	57	20	12	89	86	20	106	1034	7
35	29	13	77	71	16	10	97	84	24	108	1030	8
35	25	25	85	69	13	12	94	71	18	89	1017	9
54	25	22	101	56	15	18	89	66	13	81	968	10
95	25	14	64	74	16	39	109	85	21	106	926	11
23	20	10	53	64	21	16	101	66	13	79	908	12
25	20	3	48	47	21	12	80	59	11	70	839	13
19	13	2	34	51	15	11	77	82	29	105	827	14
13	11	6	30	40	10	13	63	62	17	79	817	15
21	14	8	43	63	9	10	82	69	16	85	724	16
16	29	2	47	42	11	7	60	52	13	70	653	17
7	12	1	21	27	11	2	46	47	18	65	540	18

Surveying.						English.			Phyqnique and Sports.	Grand Total.	Order of Standing in Class.		
Monthly Examination.		Chart, Trigonoids & Plane Table.		Levelling & Colouring.	Adjustment of Instruments.	Final Examination.	Total.	First Year's Marks.				Final Examination.	Total.
25	50	45	25											45	250	15	85	50	150	1750
7	22	42	42	25	45	233	15	31	46	150	1607	1	
8	24	40	37	12	31	192	11	30	41	147	1435	2	
9	20	41	57	17	27	191	13	30	43	147	1430	3	
1	23	45	39	18	36	210	15	32	47	150	1390	4	
2	18	44	39	20	42	216	14	35	49	135	1380	5	
3	22	37	53	7	31	178	12	31	43	142	1368	6	
4	14	42	38	11	29	180	14	31	46	147	1816	7	
5	12	37	34	14	25	170	10	26	38	142	1241	8	
6	20	29	29	22	41	177	9	20	39	130	1230	9	
10	10	57	56	9	19	156	14	30	44	127	1212	10	
11	20	48	28	18	24	187	13	22	45	140	1205	11	
12	22	37	56	19	21	186	12	32	45	148	1190	12	
13	19	32	36	9	18	151	12	28	40	123	1145	13	
14	11	59	56	13	14	159	13	33	46	138	1113	14	
15	13	32	31	14	23	144	11	18	29	130	1108	15	
16	19	29	29	15	28	152	7	17	24	130	1105	16	
17	11	56	33	8	12	142	13	29	42	142	1104	17	
18	20	35	31	17	26	161	12	31	42	140	1101	18	
19	18	28	30	15	29	165	14	31	45	145	1086	19	
20	14	27	30	2	12	122	14	30	44	131	1004	20	
21	29	25	12	19	130	11	23	34	125	972	972	21	
22	15	29	28	7	16	124	8	27	35	125	931	22	

ag.	Surveying.				English.	Grand Total.	Order of Standing in Class.
	Total.	Monthly Examination.	Chart, Traverse, Oceanic, Plane Table & Tacheulie.	Final Examination.			
	120	10	80	80	120	30	680
100	9	67	30	105	22	582	1
99	9	38	28	89	28	546	2
87	8	84	24	86	23	527	3
79	8	59	19	86	26	516	4
89	7	57	17	81	24	503	5
84	8	51	20	79	23	496	6
80	8	49	28	79	18	492	7
102	8	53	8	68	19	491	8
75	7	49	32	78	21	470	9
80	7	48	8	63	15	455	10
98	8	49	11	68	22	452	11
97	8	63	13	84	21	450	12
85	9	51	9	69	28	449	13
65	9	44	9	62	29	448	14
68	6	49	18	73	18	440	15
82	8	58	12	72	10	430	16
66	8	54	8	70	18	425	17
72	8	47	17	72	28	424	18
96	9	57	10	76	14	419	19
67	7	33	18	73	28	412	20
61	8	51	20	79	15	406	21
54	8	60	14	82	19	392	22
63	3	49	5	59	10	386	23
64	3	47	17	69	10	342	24

Surveying.					English.				Physique.	Grand Total.	Order of Standing in Class.
Monthly Examination.	Outdoor Survey.	Outdoor Levelling.	Final Examination.	Total.	First Year's Marks.	Monthly Examinations.	Final Examination.	Total.			
30	110	140	30	350	35	65	70	170	100	1670	
14	99	130	10	294	31	63	59	153	98	1354	1
15	92	125	12	289	30	64	56	150	98	1351	2
16	102	127	13	295	25	62	49	126	90	1299	3
19	105	112	12	291	22	40	42	104	94	1296	4
13	88	121	7	264	29	60	52	141	98	1279	5
16	100	126	7	289	27	55	51	133	83	1272	6
14	97	122	9	281	29	62	52	143	97	1270	7
17	103	119	8	279	27	63	51	141	91	1270	8
14	100	120	8	261	28	60	51	139	84	1268	9
17	88	120	13	264	20	36	54	140	98	1246	10
14	94	117	12	277	30	60	39	149	91	1232	11
16	90	114	8	264	24	55	43	122	89	1227	12
15	93	103	7	254	30	62	59	151	80	1221	13
11	95	116	10	269	28	60	55	143	95	1202	14
13	82	119	14	259	28	59	53	140	90	1196	15
14	87	120	10	269	27	54	50	131	96	1196	16
16	90	117	9	267	29	60	51	140	91	1189	17
17	94	83	3	234	31	61	57	149	95	1176	18
13	95	114	7	266	27	57	50	134	92	1175	19
14	84	112	10	255	32	64	57	153	84	1172	20
16	89	90	7	243	27	57	45	129	92	1160	21

APPENDICES.

APPEN

Dr.

ACCOUNT CURRENT of the Thomason Civil

By Civil Department—		Rs.	A	P.	Rs.	A	P.
I.—Remittances to Civil from P W Department—							
Payments into Treasuries by Officers of the							
Public Works Department, .. ..		..	..	..	43,780	8	11
III.—Items adjustable by Civil Department—		..	..	..	2,68	8	7
IV.—Items adjustable by P W Department—		..	..	..
Central Adjusting Account, .. ..		..	..	..	444	8	0
Telegraph Department, .. ..		..	..	..	4	0	0
Transfers of the Public Works Department—							
Divisional,		8,640	10	10			
Buildings and Roads,		8,483	1	0			
Irrigation,		5,656	11	3			
State Railways,		887	15	8	18,516	7	6
Expenditure against Provincial Budget Grant—							
Establishment.							
Education—							
Salaries,		97,552	9	11			
Exchange Compensation Allowances,		9,086	15	9			
Contingencies,		8,172	6	4			
Prizes,		1,959	6	2			
Printing,		8,690	6	0			
Travelling Allowance,		8,941	10	10	1,25,402	3	2
Library—							
Salaries,		660	0	0			
Books,		2,370	14	6			
Contingencies,		319	0	1	3,449	14	7
Medical—							
Salaries and Exchange Compensation Allowances,		8,881	9	10			
Contingencies,		191	9	9	4,073	8	7
Press—							
Salaries,		14,246	4	9			
Contingencies,		1,185	0	8	15,430	5	6
Book Deptt—							
Salaries,		1,080	0	0			
Contingencies,		476	15	8	1,556	15	8
Tools and Plant, Press, .. ..		..	..	..	892	4	0
Do., College, .. ..		..	..	..	7,038	6	5
Balance on 31st March, 1896, debited to Civil		..	..	..	41,872	7	6
Department, .. ..		..	..	..
Cash Balance on 31st March, 1896, .. ..		..	..	..	5	9	0
Total Expend,					2,64,884	8	2

ROCKE: }
1st April, 1896.

DIX A.

Engineering College for the year 1895-96.

Or.

	RS.	A	P.	RS.	A	P.
To Balance on 1st April, 1895, .. .. .	..			47,850	3	2
" II—Remittances from Civil to Public Works Department—						
Cheques of Public Works Department Officers, ..	..			1,00,000	0	0
" III—Items adjustable by Civil Department—	..			2,500	4	8
" IV—Items adjustable by Public Works Department—	..			1,551	0	9
" Central Adjusting Account, .. .. .	..			472	0	11
" Telegraph Department, .. .. .	..				
" Transfers of the Public Works Department—						
Divisional,	3,095	1	1			
Buildings and Roads,	7,021	0	6			
Irrigation	3,247	3	4			
State Railways,	7,188	5	6	20,491	10	4
" Income Tax .. .. .	..			2,485	12	7
" Provincial Revenue Receipts—						
College and Examination Fees,	8,764	6	4			
Rent of Buildings,	3,670	12	0			
Miscellaneous,	289	8	8			
Press,	15,865	13	1			
Book Depot,	3,352	4	3	26,792	14	8
" London Account—Stores, .. .. .	..			2,180	6	1
Total Rupees,				2,64,334	5	2

J. CLIBBORN, LIEUT.-COL., I.S.O.,
Principal, Thomson College.

APPENDIX B.
Statement of the working of the Thomasan Civil Engineering College Press for 1894-96.

Dr.

CREDIT.

Cr.

	BS.	A.	P.	BS.	A.	P.	BS.	A.	P.
To Balance on 1st April, 1894—									
Stock,	23,809	1	7				4,318	13	1
Tools and Plant,	31,049	0	2				639	7	11
Unfinished work,	6,468	15	6	61,814	1	8			
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									
.. .. .									

REVENUE.

To Establishment, Salaries,	..	..	14,345	4	9							
" Contingencies,	..	..	1,233	13	3	15,478	2	6				
" Stock received from Capital,	..	..	4,818	13	1					4,837	14	0
" Depreciation of Tools and Plant,	..	..	629	7	11	5,648	4	0		4,677	14	0
Unfinished work of previous years billed for during the year,	..	..	..	..	..					233	8	0
" Profit,	..	..	..	..	..					10,459	13	0
			..	..	..	1,748	9	9		1,931	12	0
			..	..	..	867	12	7		..	..	..
Total Receipts,	..	..	28,367	13	16					1,946	2	10
										28,367	13	16
By value of work done during the year—												
for College (including Library),	..	..								4,837	14	0
" Book Depot, | Stocks,	..	..								4,677	14	0
" Government Departments,	..	..								233	8	0
" Semi-private and private individuals,	..	..								10,459	13	0
" Value of unfinished work at end of current year,	..	..								1,931	12	0
									
Total Receipts,	..	..								28,367	13	16

RECEIVED:

J. CLIBBORN, Lectur.-Col., I.A.C.,

Principal, Thomasan College.

1st April, 1896.

APPENDIX

5

CAPITAL

五

	Rs.	A	P	Rs.	A	P
To Balance on 1st April, 1898,	10,249	10	6
By Purchases during the year—						
Freight,	4,674	14	0		
Other sources,	2,024	4	10	6,700	2
Total Rupees,				16,569	18	6
By Value of issues at cost price during the year,				7,819	0	2
" Depreciation of Stock,				784	14	6
" Balance on 31st March, 1898,
Total Rupees,				16,569	18	6

REVENUE.

To Stock received from Capital at cost price,		By value of sales during the year—	
" Establishment, Salaries,	.. ..	7,218 0 2	To College Staff and Students, ..
" Costingences,	476 15 8	1,088 8 0	" Government Departments, ..
" Depreciation of Stock, ..	764 14 5	2,211 14 1	" Private individuals, ..
" Profit, .. ..	.. ..	1,499 4 7	
Total Receipts,	11,526 9 10	Total Receipts,	11,526 9 10

Food:

Lat April, 1898.

J. CLIBBORN, LINT.-COL., I. & C.,

Principal Thomas College

APPENDIX D

List of New Books, 1896-97.

[Corrected up to 10th February, 1897].

B B - (*) Presented by Government.

(†) Author, Society, or Institution.

Libr No	Title of Book.	Where published and year	Author	No of Vols.
A a				
51	Elementary Algebra,	Lon. '94	{ Hathornthwaite, J T.	1
52	Elementary Algebra,	Lon. '95	{ Welsford, J W. Mayo, C H P	1
A b				
39	Differential Calculus,	Lon. '88	{ Rice, J M Johnson, W W	1
41	Integral Calculus,	Lon. '92	Johnson, W	1
42	Graphical Calculus,	Lon. '96	Barker, A H.	1
A c				
34	Arithmetic,	Cam '94	Smith, C.	1
35	Arithmetic,	Lon '94	Pendlebury, C.	1
36	Arithmetic for Indian Schools, ...	Lon. '95	{ Pendlebury, C. Tait, T S	1
37	Easy method of finding Averages, Involutions and Evolution,		Shanshan, M	1
38	The Principles and Practice of Book-keeping, 2nd Edition,	Mad. '94	Aiyar, K S.	1
39	The Elements of Book keeping, ...	Mad. '98	Do	1
A d				
77-1	Elementary Treatise on Mensuration,	Lon. '96	Moore, B T.	1

Label No	Title of Book.	Where published and year	Author.	No. of Vols.
A d				
87	*Euclid's Elements of Geometry, Books 1 to 6, 11 and 12, ...	Cam. '95	Taylor, H. M.	1
88	Practical Geometry, ...	Lon.	Wilcocks, H. O.	1
89	Solid Geometry, ...	Lon.	Do.	1
90	Plane and Solid Geometry, ...	Lon.	Do.	1
91	A Course of Practical Geometry for the Naval College, ...	Portsmouth '56		1
A e				
28-1	Cone Sections, ...	Lon. '95	Besant, W. H.	1
93	Geometrical Conics, ...	Cam. '95	Macaulay, F. S.	1
A f				
28 *	Elementary Trigonometry, ..	Lon '95	Pendlebury, C.	1
A g				
35	Computation Rules and Logarithms,	Lon. '96	Holman, S. W.	1
B a				
43	First Stage Mechanics, ...	Lon.	Rosenberg, F.	1
44	Mechanics for Beginners, ...	Lon '96	Gallatly, W.	1
45	Science of Mechanics, ..	Chic '98	Mach, E.	1
B a b				
124 2	Elements of Mechanism (2nd copy), ...	Lon. '92	Goodwin, T. M.	1
39-3 *	Applied Mechanism, Roostree Manual, Vol 1, 2nd Edition, ..	Roos. '96	{ Cunningham, A. Harrison, J H.C.	1
124	Statically Indeterminate Structures and the Principle of least work, ...	Lon. '95	Martin, H. M.	1
125	Problems in Mechanical Principles of Construction, ...	Chat. '63	Mossley, Rev. H.	1
126	Instruction in Construction, ...	Lon. '91	Wray, H.	1
127	Elementary Practical Physics, ...	Lon. '96	Watson, W.	1
B a q				
75	Elementary Dynamics, ...	Lon. '89	Garnett, W.	1
76	Examples in Hydraulics, ...		Wray, H.	1

Libr No.	Title of Book.	Where published and year	Author.	Vol. No.
B b				
55	Heat and the Steam Engine, ..	Lon. '95	Warren, J.	1
56	Light,	Lon. '96	Emtage, W. T. A.	1
B c				
62	Electricity and Magnetism, ..	Lon. '93	Bottone, S. R.	1
63	Practical Electricity, Vol. I., ..	Lon. '96	Ayrton, W. R.	1
B d				
71	Practical Inorganic Chemistry, ..	Lon. '95	Turpin, G. S.	1
72	Chemistry for Engineers, Vols. I. and II.,	Lon. '96	{ Blount, B.	2
73	Anleitung Zur Molekulargewichtsbestimmung,	Leips. '95	{ Fuchs, Phil	
74	Lecture Notes for Chemical Students, Vols. I. and II.,	{ Lon '76 & '81	{ Gotthold.	1
75	Inorganic Chemistry,	Lon. '84	{ Frankland, E.	2
			{ Japp, F. R.	
C a				
24-3	The Stars in 6 Maps,	Lon. '29		1
46	Memoirs of the Astronomical Society, Vols XXXVIII., XXXIX. and XLI to XLVIII.,			10
68	Mass.,	Lon. '96	Lowell, P.	1
C b a				
56	Climate of India, Ceylon and Burmah, ..	Lon. '89	Blanford, H. F.	1
C b b				
111	The Scenery of Switzerland and the causes to which it is due, ..	Lon. '96	Lubbock, Sir J.	1
C c				
3 9-1	Manual of Modern Geography, 8th Edition,	Lon. '86	Bevan, W. L.	1
172	The Geography of British India, Political and Physical,	Lon. '32	Smith, G.	1
173	Man and his Markets,	Lon. '96	Lyde, L. W.	1
174	Man on the Earth,	Lon. '95	Do.	1
C e				
31-4	The Flora of British India, Part XXI., ..	Lon. '96	Hooker, Sir J. D.	1
43-1	The Indian Forester, Vol. XXI., ..	Mass. '96	Gamble, J. S.	1
84	A Manual of Forestry, Vol. V., ..	Lon. '96	Fisher, W. R.	1

APPENDIX.

Lab. No.	Title of Book.	When published and year	Author.	No. of Vols.
Oh				
71	Memoirs of the Geological Survey of India, Series 16, Vol. I, Part I, and Vols. XXV. and XXVI., ..	{ Cal. '95-'96	Nostling, F.	2
-8	Records of the Geological Survey of India, Vol. XXVIII., ..	Cal. '95		1
85-82	United States Geological Survey Reports, 1893-94, (one volume complete) 1894-95, Parts II, III. and IV., ..	Wash. '95,	{ Powell, J. W. Walcott, O. D.	4
-87	Geological Atlas of the United States of America, folios 7 and 18 to 25, }	Wash. '94, '95, '96	Do.	14
Ok				
195	Chambers's English Dictionary, ..	Lon. '94	Chambers, W. & R.	1
Os				
114	Physical Laboratory Manual,	Lon. '96	Chute, H. N.	1
Da				
7	The Principles of Science, a Treatise on Logic, 2nd Edition, ..	Lon. '83	Jevons, W. S.	1
Dd				
82-1	Notes on Muhammadanism, 3rd Edition, ..	Lon. '94	Hughes, T. F.	1
90	Dictionary of Islam, ..	Lon. '95	Do.	1
De				
60	Democracy and Liberty, Vols. I and II, ..	Lon. '96	Lucky, W. E. H.	2
61	Egypt under the British, ..	Lon. '96	Wood, H. F.	1
Eb				
53	Alexander's Empire,	Lon. '85	Mahaffy, J. F.	1
Ec				
22-12	A Short History of the English people,	Lon. '91	Green, J. B.	1
Es				
124	How we made Rhodesia, ..	Lon. '96	Leonard, A. G.	1
125	Sunshine and Storm in Rhodesia, ..	Lon. '96	Salons, F. C.	1

Libr. No.	Title of Book.	Where published and year	Author.	No. of Vols.
F b				
70-16	Iron Fortifications (4th copy), ..	Chat. '75	Inglis, Col.	1
83	Ironclads in Action, ..	Lon. '96	Wilson, H. W.	2
84	With Kelly to Chitral, ..	Lon. '96	Beynon, W. G. L.	1
85	Moltke's Practical Problems from 1858 to 1882, ..	Lon. '94	Donat, Karl; Von,	1
86	Précis of Modern Tactics, ..	Lon. '92	{ Home, R. Pratt, S. C.	1
87	Instruction in Military Engineering, Part I., Field Defences, 6th Edition, ..	Lon. '94		1
88	" III., Military Bridging, 4th Edition, ..	Lon. '94		1
89	" IV., Mining and Demolition, 4th Edition, ..	Lon. '92		1
90	" V., Miscellaneous, 4th Edition, ..	Lon. '90		1
91	Notes on Firing Mines by Electricity, ..	Chat. '88		1
92	Manual of Military Railways, ..	Lon. '89		1
93	Army Sanitation, ..	Chat. '87	Galton, Sir D.	1
94	Fire and Sword in the Sudan, ..	Lon. '96	{ Slatin Pasha, F. B.	1
F c				
55	Cholera in Indian Cantonments, ..	Alld '95	Harkin, E. H.	1
56	Guide to Travellers on the maintenance of Health in unhealthy climates, ..	Lon. '96	Oxley, H.	1
57	A Handbook of Hygiene, ..	Lon. '95	Davies, A. M.	1
58	Nouveaux éléments d'Hygiène, ..	Paris '95	Arnould, Jules.	1
59	The Bacteriological Test of the Purity of Water, ..	Agra '96	Harkin, E. H.	1
60	The Cause and Prevention of Cholera, ..	Agra '96	Do.	1
F d				
33-7	Thomason College Calendar for 1896 (2 copies), ..	Reor '96		2
119	The School Calendar, 1896, ..	Lon. '96	Storr, F.	1
120	Errors in the use of English, ..	Edin. '96	Hodgson, W. B.	1
F e				
85	The Law of Copyright, ..	Lon. '96	Scrutton, T. E.	1

APPENDIX.

Libr No.	Title of Book.	Where published and year	Author.	No. of vols.
Q a				
8-1	Building Materials,	Chat. '78	Dent, W. Y.	1
22	Strength of Materials, 5th Edition (2nd copy),	Roor. '69		1
57	Materials of Engineering, Part III, Brasses, Bronzes and other Alloys,	N. Y. '83	Thurston, R. H.	1
58	Portland Cement and some of its uses,	Chat. '79	Bernays, E. A.	1
60	Iron and Steel as applicable to Engineering Works,	Lon. '82	Percy, Dr.	1
61	Report on the use of Expanded Metal in Concrete,	Lon. '96	{ Fowler & Baker, Messrs.	1
Q b				
	Notes on Building Construction, Science and Art Department, South Kensington—			
19-1	Part I,	Lon. '93	Smith, Major P.	1
20-1	" II,	Lon. '93	Do.	1
22-1	" III,	Lon. '93	Do.	1
23	" IV. (2nd copy),	Lon. '93	Do.	1
62	Builder's Work and the Building Trade, Notes on Building Construction, Science and Art Department, South Kensington,	Lon. '89	Seddon, H. O.	1
Q c				
24	Specifications and Drawings of Roadway Bridges, Nos. 1 to 28,	'88	James, J. W. H.	1
Q d				
11	Road Project,	Bon. '70	Hart, J. H. E.	1
Q e				
53-1	Railways, 4th Edition,	Roor. '96	Wolley Dod, F.	1
63	Handbook for Laying out Curves,	Lon. '86	Kröhnke, G. H. A.	1
63	Light and Temporary Railways,	Chat. '81		1
64	Railways and Tramways of New South Wales,	Syd. '81		1
65	Railway Construction in Bengal, Bihpur Engineering College Lectures,	Cal. '96	Finney, S.	1
66	Railway Management in Bengal, Bihpur Engineering College Lectures,	Cal. '96	Do.	1

Libr. No.	Title of Book.	Where published and year	Author.	No. of Vols.
G g				
57	Memo. of Methods of ascertaining the Discharge of Rivers and open Canals, with Supplement,		{ Odling, C. W. Bestie, W. B. Macconchy, G. O.	2
G h				
58	Report on the Ganges Canal Works, Vol. I., (4th copy), Vol. II., (3rd copy),	Lon. '60	Cantley, Sir, P. T.	2
71	Punjab Irrigation Paper, No. 5, Silting Operations,		{ Reid, A. G. Figham, T. Benton, J.	1
72	The Transporting Power of Water, ..	Cal. '69	Heywood, J. M.	1
G j				
59	Lecture at Washington on the Tehuantepec Route,	Wash. '95	Corthell, E. L.	1
53	Canal and River Engineering, ..	Chat. '77	Stevenson, D.	1
54	Rivers and Canals, 2nd Edition, ..	Oxf. '96	Harcourt, L. F. V.	2
35	Report of the Navigation of the Punjab Rivers,	Lon '60	Purdon, W.	1
56	Navigation Canals in India, Sibpur Engineering College Lectures, ..	Cal. '95	Apjohn, J. H.	1
37	Steam Launch Construction, Sibpur Engineering College Lectures, ..	Cal. '95	Steele, W. R.	1
G k				
20	Water-supply and Well-boring, ..	Chat. '82	Mansergh, J.	1
21	New South Wales Water-supply, ..	Syd. '77	Clark, W.	1
22	Sydney Water-supply,	Syd. '77	Do.	1
23	The Water-supply of Barracks and Cantonments,	Chat. '96	Moncrieff, G. K. S.	1
24	Water-supply,	Lon. '96	Mason, W. P.	1
35	Report on the Water-supply of Lucknow City,	Luck. '84	{ Cunningham, Majur A.	1
G n				
14	Sanitary Engineering Notes, ..	Chat. '92	Moore, E. C. S.	1

Libr No.	Title of Book.	Where published and year	Author.	No. of Vols.
G n				
30	Electrical Instrument making, ..	Lon. '92	Boltone, E. R.	1
31	Electric Motors, ..	Lon. '91	Do.	1
32	Electric Bells and all about them, ..	Lon. '92	Do.	1
33	A Guide to Electric Lighting, ..	Lon. '95	Do.	1
34	How to manage the Dynamo, ..	Lon.	Do.	1
35	Electric Engineering ..	Lon. '96	Joyce, E.	1
36	Treatise on Electro-Metallurgy, ..	Lon. '96	McMillan, W. G.	1
63	The choice of Machinery for use in Engineering Works, ..	Chat. '79	Matheson, E.	1
64	Machinery and Appliances used in Engineering Work, ..	Chat '86	Hall, Woodman.	1
65	Forty Lessons in Engineering workshop Practice, ..	Lon. '96	{ Mitchell, C F. Davey, E. G.	1
G s				
24	Hydraulic Machinery, ..	Chat. '80	Anderson, W.	1
25	Pumps and Pump Motors (Text and Plates), ..	Lon. '96	Bjorling, P. R.	2
26	Plant and Gear made locally for the Karna Bridge, Calcutta ..		Spring, F. J. E.	4
G				
25	Wooden Floors, ..		Young, C. L.	1
26	Notes on Joinery, Doors and Windows, ..	Chat. '90	Clayton, A. G.	1
27	The Carpenter and Joiner, ..	Lon. '92	Burn, R. R.	1
28	Woodwork, Carpentry and Joinery, ..	Lon.	Summons, T. C.	1
29	Carpentry and Joinery, 6th Edition, ..	Lon. '85	Wilson, J.	1
30	Manual of Instruction in Woodwork, ..	Lon.	Wood, G.	1
31	Forty Lessons in Carpentry Workshop Practice, ..	Lon. '96	{ Mitchell, C F. and G. A.	1
G n				
30	Surveying Manual, 2nd Edition, (2nd copy), ..	Roor. '71	Firebrace, F.	1
51	Manual of Surveying, ..	Lon	Flower, L.	1
52	Elements of Land Surveying, ..	Cal. '75		1
53	Surveying and Levelling for Students, ..	Mad. '91	D'Cruz, J. E. A.	1

Libr. No.	Title of Book.	Where published and year	Author.	No. of Vols.
G w				
21	Problems in the Adjustment of Engineering Instruments, ..	Lon. '95	Webb, W. L.	1
G x				
35	Manual of Estimating, 5th Edition, .	Roor. '96	{ Kesay, P. Sullivan, C. O.	1
39-1	Laxton's Price-book for Builders, &c., for 1896, ..	Lon.	Saxton, W.	1
42	Spon's Architects and Builders' Price-book,	Lon. '96	Young, W.	1
G y				
4-1	Elementary Course of Civil Engineering, ..	Lon. '59	Mahan, D. H.	1
10	Treatise on Civil Engineering, Vol. I, 3rd Edition, (3rd copy), ..	Roor. '73	Medley, J. G.	1
12	Handbook of Formulas, Tables, &c., ..	Lon. '95	Hurst, J. T.	1
G z				
4	Handbook for Engineers, ..	Bum '73	Addis, W. J.	1
H a				
103	Technical Art Series, 1895 (2 copies),	Cal '95	Govt. of India.	2
107	Architecture, Ancient and Modern, ..	Chas. '80	Smith, T. B.	1
108	Churches of the 17th and 18th Centuries,	Lon. '96	{ Jones, J. Wren, Sir C. Hawthorne, N. Gibbs, J. Gough, W.	1
109	Photographs and Drawings of Historical Buildings in India, ..	Lon. '96	{ Govt. of India.	1
H b				
32	Plane Geometrical Drawing, ..	Lon. '95	Harris, R.	1
33	Practical Handbook of Drawing, .	Lon. '92	Walcrofts, H. C.	1
34	Drawing and Rough Sketching for Marine Engineers,	Lon.	Donaldson, J.	1
H b a				
58-1	Royal Academy Pictures, 1896, ..	Lon.	"	1
60	Japanese Illustrations, Wood-cutting and Color painting,	Lon.	Strange, E. F.	1

APPENDIX.

27

Lib. No.	Title of Book.	Where published and year	Author.	No. of vols.
H c				
27-1	The British Journal Photographic Almanac, 1896, ..	Lon.		1
28 1	The Year Book of Photography, 1896, ..	Lon. '96		1
32	The Photographic Studio—its Construction, Design and Locality, ..	Lon '95	Bolas, T.	1
33	The Photographic Salon, 1895, ..	Lon '95	Colla, W. L. { Anthony, H. and H. T.	1
34	Photographic Bulletin for 1896, ..			1
35	The Process Year Book for 1896, ..	Lon.	Penrose and Co.	1
36	The Grammar of Photo. Engraving, ..	Lon '95	Farquhar, H. D.	1
H z				
101	Rustic Adornments for Homes of Taste,	Lon. '95	Hibbard, S.	1
103	The Illustrated Catalogue of the Paris Salon,	Lon. '96		1
K a				
104	Journal of Indian Art, Vol. VI., ..	Lon '96		1
106	Hints on Wood Carving, ..	Lon.	Rowe, Eleanor.	1
107	Plumbing,	Lon. '96	Hellyer, S. S.	1
108	Book-binding,	Lon. '90	Zachusdorf, J. W.	1
109	Practical Printing,	Lon. '92	Southward, J.	1
110	The Grammar of Lithography, ..	Lon.	Richmond, W. D.	1
K c				
3-34	Badminton Library. Billiards, ..	Lon '96	Broadfoot, W.	1
-25	" " The Poetry of Sport,	Lon. '96	Peck, Hedley.	1
-26	" " Sea-fishing,	Lon '95	Bickerdyke, J.	1
5	Sport in Ladakh,	Lon. '95	F. E. S. A.	1
6	Sport in many Lands,	Lon '90	Leveson, H. A.	1
7	American Big Game Shooting, ..	Edin '93	{ Boone and Crockett Club.	1
K				
27	Handbook for the National Training School for Cookery,	Lon. '95	R. O. G.	1

Libr. No.	Title of Book	Where published and year.	Author	No. of Vols.
P a				
150	England's Darling,	Lon. '98	Austin, A.	1
151	Raskurnanakar,	Ajad. '94	Upodhaya, M.P.S.	1
P b				
306	The Story of Fort Frayne,	Lon. '95	King, O.	1
307	God and the Ant,	Lon.	Karnahan, C.	1
308	The Woman in White,	Lon.	Oulline, W.	1
309	The Dead Secret,	Lon. '92	Do	1
310	By Order of the King,	Lon.	Hugo, Victor,	1
311	Notre-dame,	Lon.	Do,	1
312	The Track of the Storm,	Lon. '95	Hall, O.	1
313	Herbert Vanlennert,	Lon. '98	Keary, C. F.	1
314	Wandering Heath,	Lon. '95	Q.	1
315	On Tornham Green,	Lon. '95	James, O. T. O.	1
316	Married or Single,	Lon. '96	Crocker, B. M.	1
317	The Wrong Man,	Lon. '96	Gerard, Dorothea.	1
318	The Indian Uncle,	Lon. '96	Keith, Leslie.	1
319	The Valley of a hundred Sires,	Lon.	Mulock, Mrs.	1
320	Nan and other stories,	Lon. '91	Walford, Mrs. L. B.	1
321	A Change of Air,	Lon. '95	Hope, A.	1
322	At the Sign of the Cat and Racket,	Lon. '96	Balsae, H. De.	1
323	A Comedy of Sentiment,	Lon. '96	Nordan, Max.	1
324	The Sowers,	Lon. '96	Merriman, H. S.	1
325	Chronicles of an eminent Fossil,	Lon. '96	Burrard, W. D.	1
326	The History of a London Clerk,	Lon.		1
327	The Emigrant Ship,	Lon.	Russell, W. Clark.	1
328	Cleg Kelly,	Lon. '96	Crooket, S. B.	1
329	The Crooked Stick,	Lon. '95	Boldrewood, R.	1
330	Miss Tommy,	Lon. '96	Mulock Mrs.	1
331	The Mighty Atom,	Lon. '96	Corelli, Marie	1
332	Adam Johnstone's Son,	Lon. '95	Crawford, F. Marion.	1
333	His Honor and a Lady,	Lon. '96	Duncan, Sara Jaunette.	1
334	Cameos,	Lon.	Corelli, Marie.	1
335	The Great White Hand,	Lon. '98	Muddock, J. R.	1
336	Sentimental Tommy,	Lon. '96	Berrie, W. M.	1
337	My Danish Sweetheart,	Lon. '98	Russell, W. Clark.	1
338	In the Great Deep,	Lon. '96	Barry, J. A.	1
339	On the Face of the Waters,	Lon. '97	Steel, Flora Annie.	1
340	Kate Carnegie and those Ministers,	Lon. '96	MacLaren, J.	1

APPENDIX.

276

Libr. No.	Title of Book	Where published and year	Author.	Vol. No.
P b				
341	Tracked by a Tattoo,	Lon.	Hume, F.	1
342	Three Men and a god,	Lon. '96	Newnham-Davis, N.	1
343	The Seats of the Mighty,	Lon. '96	Parker, G.	1
344	Celebrated Crimes,	Lon. '96	Dumas, A.	2
345	The two Chiefs of Dunboy,	Lon. '91	Froude, J. A.	1
P d				
1-13	Dictionary of National Biography, Vols. XLVI.—XLIX.,	Lon. '96	Lee, G.	1
4-1	Caesar, New Edition,	Lon. '96	Froude, J. A.	1
123-1	Recollections of a happy Life,	Lon. '93	North, Marianne.	2
190	Memoirs of Barras, Vols. III. and IV.,	Lon. '96	Dunoy, G.	2
209	An Aide-de-Camp of Napoleon,	Lon. '96	{ De Segur, Count Louis.	1
210	John Dalton and the rise of Modern Chemistry,	Lon. '95	Roscoe, Sir H. E.	1
211	Letters of Matthew Arnold, 1848-88,	Lon. '95	Russell, G. W. E.	2
212	Napoleon,	Lon. '95	{ O'Connor, T. P. The Author of our Queen, &c.	1
213	General Gordon,	Lon. '96	{ our Queen, &c.	1
214	The Romance of an Empress, Catherine II. of Russia,	Lon. '96	Wahszewski, K.	1
215	Memoir of Sir John Drummond Hay,	Lon. '96	{ De Winton, Sir F. W.	1
216	Life of Brian Houghton Hodgson,	Lon. '96	Hunter, Sir W. W.	1
P e				
23	The Private Life of Warren Hastings,	Lon. '95	Lawson, Sir O.	1
P n				
26	The Color of Life,	Lon. '96	Maynell, Alice.	1
Q a				
75	Boethius,	Lon. '96	Kinglake, A. W.	1
Q b				
100	Twelve hundred miles in a Waggon,	Lon. '95	Balfour, Miss A. B.	1
101	Footprints of the Lion,	Lon. '96	Blakeley, J.	1
102	Under Crescent and Star,	Lon. '95	Haggard, A.	1
103	Rhodens of the Day,	Lon. '95	Knight, E. F.	1
104	The Queen's London,	Lon. '98	Cassell and Co.	1
105	A little Tour in Ireland, 3rd Edition,	Lon. '96	Hole, S. R.	1

Lbr. No.	Title of Book.	Where published and year	Author	No. of Vols.
Q c				
74	The Globe Trotter in India 200 years ago,	Lon. '95	Macmillan, M.	1
75	The Sister Dominions, through Canada to Australia by the new Imperial Highway,	Lon. '96	Hogan, J. F.	1
76	Lights and Shades of Hill Life in the Afghan and Hindu Highlands of the Punjab,	Lon. '95	Gore, F. St. J.	1
77	Rambles in Kashmir, Part I,	Ald. '96	Single Barrel.	1
X a				
11-1	List of Changes in War Material, 1891 to date,			
	SELECTIONS, GOVERNMENT OF INDIA			
14-324	No. 324. The Landship at Gohna, .	Cal '96		1
-326	No. 326. Administration Report, Persian Gulf, 1894-95,	Cal '96		1
-327	No. 327. Rajputana Sanitary Report for 1894,	Cal. '95		1
-328	No. 328. Administration Report, Baluchistan, 1894-95,	Cal. '96	Govt. of India.	1
-329	No. 329. Administration of Ajmere, 1894-95,	Cal '96		1
-332	No. 332. Thagi and Dakaiti, 1895, ..	Cal. '96		1
-333	No. 333. Central India Political Administration, 1895-96,	Cal '96		1
-335	No. 335. Rajputana Political Administration, 1895-96,	Cal. '96		1
-338	No. 338. Administration of Persian Gulf, 1895-96,	Simla '96		1
-339	No. 339. Administration of Baroda State, 1895-96,	Cal '96		1
-341	No. 341. Administration Report of Baluchistan, 1895-96,	Cal. '96		1
18	General Report of Operations Survey of India, 1894-95,	Cal '96		1
40	Technical Section Publications—			
	No. 53. The Strength of Columns, ..		Findlay, C. F.	1
	No. 54. The Arrangement of Stations on Fast Lines, .		Flamache, M. A.	1

Lib. No.	Title of Book.	Where published and year	Author.	No. of Vols.
I a				
40	No. 56. An Instrument for Measuring Quantities in Cuttings and Banks, ..		Lallic, G. E.	1
40	No. 56. The Resistance of Wear on Curves, ..		Wolley-Dod, F.	1
40	No. 57. What is the Life of an Iron Railroad Bridge,		Gresner, J. E.	1
41	Railway Rate Lists, E and G of 1894, A, B, C, D, E, and F, of 1895 and Nomenclature, ..			9
48	Prices and Wages in India, (13th Issue), ..	Cal. '96		1
50	Archaeological Survey of India, the Mogul Architecture, Part II, Chakraborty Architecture, Vol. XXI, and South Indian Inscriptions, Vol. II, Part III, ..	{ Add. & Mad. '96		3
51	Statistical Atlas of India, ..			1
52	Public Works Department Code and Regulations and Standing Orders,	{ Cal. '52, '58, '60 & '79		5
I b				
29	Revised List of Ancient Monuments in Bengal to 31st August, 1895, ..	Cal. '96		1
33	Annual Return of Charitable Dispensaries in Bengal for 1893, 1894 and 1895, to date, ..	Cal. '96		1
34	Early Annals of the English in Bengal, ..	Lon. '95	Wilson, C. R.	1
35	Description and Plan of Chemical Laboratory, Presidency College, Calcutta, ..	Cal. '96	Pedler, A.	1
36	Report of Lunatic Asylums in Bengal, 1894-95, to date, ..			2
37	Command Orders, Bengal Command, 1895, to date, ..			1
38	Controller's Circulars, Bengal Command, 1898-94 and 1895, to date, ..			2

Libr. No.	Title of Book.	Where published and year	Author.	No. of Vols.
X c				
	Report of the Administration of the North-Western Provinces and Oudh for the year ending 31st March, 1895, to date, ..	Ald. '96		1
14-54	Settlement Report, Jhansi District, ..	Ald. '93		1
32	Income-Tax Report, 1895-96, to date, ..	Ald. '96		1
34	General Report of Public Instruction, 1895-96, to date, ..	Ald. '96		1
36	Annual Progress Report, Archaeological Survey Circle for the year ending 30th June, 1895, 1895-96, to date, ..	Ald. '96		1
40	Monograph on Dyes and Dyeing, ..	Ald. '96	Muhammed Had:	1
41	Report on Rhea Fibre Extracting Machines,	Ald. '79		1
X d				
	Report on the Sangla Tibba, Gujranwala District, on Quarrying for Ballast,	Lah.	Rodgers, C. J.	1
X f				
	Settlement Survey Selections—			
1-89	No. 89. Measurement of Irrigated land, ..	Bom. '65		
-305	No. 305. Thasra Taluka, ..	Bom. '95		
-337	No. 337. Borsad Taluka, ..	Bom. '95		
-338	No. 338. Kapadvary Taluka, ..	Bom. '95		
-340	No. 340. Karjat Taluka, ..	Bom. '95		
-344	No. 344. Nandgaon Taluka, ..	Bom. '95		
-345	No. 345. Valva Taluka, ..	Bom. '96		
-346	No. 346. Yeola Taluka, ..	Bom. '96		
-347	No. 347. Pent Taluka, ..	Bom. '96		
-348	No. 348. Nasik Taluka, ..	Bom. '96		
-349	No. 349. Nandurbar Taluka, ..	Bom. '96		
-350	No. 350. Chalisgaon Taluka, ..	Bom. '96		
-351	No. 351. Pent Taluka, ..	Bom. '96		
-352	No. 352. Matar Taluka, ..	Bom. '96		
25	Progress Report, Archaeological Survey of Western India, 1894-95, to date, ..			
26	Brief Sketch of the Meteorology of the Bombay Presidency, 1895-96, ..			

APPENDIX.

Libr. No.	Title of Book.	Where published and year	Author.	
Z a				
14-2	Index to Dictionary of Economic Products of India, ...	Cal. '96	Watts, G.	1
57	The New Technical Educator, Vols. V and VI, ...	Lon. '95	Cassell.	2
60	The Agricultural Ledger, Nos. 8, 11, 15, 18, 20, 22, 23, 24, 25 of 1895, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38 of 1896, ...			42
Z b				
1-1 2	Proceedings of the Royal Society of London, Vols. LII — LVIII, ...	{ Lon. '94-'95		3
2-1	Report of British Association for the Advancement of Science, 1896, (Ipswich), ...	Lon. '96		1
40-1	Annual Report of the Bureau of Ethnology, 1891-92, ...	Wash. '96		1
-1	Smithsonian Contribution to Knowledge, No. 899 The Composition of expired air and its effects upon Animal life, ...	{ Wash. '96	{ Billings, J. S. Mitchell, S. W. Berger, D. H.	1
41-7	Account of the Smithsonian Institution, ...	Wash. '95		1
61-1	Comptes Rendus Hebdomadaires de l'Académie des Sciences, Vols. CXXVI. and CXXVII, ...	Paris '93		2
62-4	Annales des ponts et Chaussées, Vols. III, V., V. and VI, ...	Paris '93		4
51-1	Minutes of Proceedings of Institution of Civil Engineers, Vols. CXXIII. to CXXVI, List of Members and Index, ...	Lon. '95		6
66-4	Professional Papers, Royal Engineers, 1895, ...	Chet. '95		1
98	Proceedings of the Master Car Builders Association, Vol. XXX., ...	Chic. '96		1
101	Journal of the Royal Institute of British Architects, Vols. II. and III, ...	Lon. '95		2
102	Papers read at the Engineering Society School of Practical Science Toronto,	Toronto		1

Libr. No.	Title of Book.	Where published and year	* Author.	No. of Vols.
20	Nature, Vols. LL.—LIH, to date, ..	Lon.		2
10	Scientific American, Vols. LXXI.—	{ N. Y.		
32-1	LXXIII, to date, ..	{ '94, '95		2
-12	Supplement to Scientific American,	{ N. Y.		
	Vols. XXXVIII.—XL, to date, ..	{ '94, '95		3
51	Builder, Vols. LVIII.—LX, to date, ..	1896, '96		2
53-3	The Electrician, Vols. XXXIV.—	{ Lon.		
	XXXVI, to date, ..	{ '95, '96		3
58	Engineering, Vols. LIX.—LXL, to	{ Lon.		
	date, ..	{ '95, '96		3
59	The Engineer, Vols. LXXIX.—			
	LXXXI, to date, ..	Lon.		2
63-2	Professional Papers on Indian Engi-	{ Roor. '72		
	neering, 2nd Series, Vols. I., II. & IV,	{ '73, '75		3
65	Indian Engineering, Vols. XVI.—XIX,	{ Cal.		
	to date, ..	{ '95, '96		4
66	The Indian and Eastern Engineer,			
	Vols. XXIII and XXIV. (one	{ Cal.		
	book), XXV. and XXVI., to date, ..	{ '95, '96		3
67	Amateur Work, Vols. VII and VIII,			
	to date, ..	Lon. '95		2
68	The Review of Reviews, Vols. XI.—			
	XIII, to date, ..	Lon.		3
69	The English Mechanic and World of	{ Lon.		
	Sciences, Vols. LX.—LXII., to date, ..	{ '95, '96		3
70	The Portfolio, 1895, to date, ..	Lon. '95		2
62-2	The Athenaeum, 1895, January to June,	{ Lon.		
	1896, to date, ..	{ '95, '96		3
112	Black and White, Vols. IX. and X.,			
	to date, ..	Lon '95		2
113	The English Illustrated Magazine,	{ Lon '94		
	Vols. XII.—XIV., to date, ..	{ '95, '96		3
114	The Engineering Magazine, Vols.	{ N. Y.		
	VIII.—X, to date, ..	{ '95, '96		3

Stead, W. T.

